



COBB COUNTY PURCHASING DEPARTMENT

1772 County Services Parkway
Marietta, Georgia 30008-4012
(770) 528-8400 / FAX (770) 528-1154
Email: purchasing@cobbcounty.org
www.purchasing.cobbcountyga.gov

IMPORTANT NOTICE – PLEASE READ CAREFULLY!!

ALL bids **MUST** be received at the Cobb County Purchasing Department.

BIDS MUST BE RECEIVED BEFORE 12:00 (NOON) ON BID OPENING DAY

Any bid received later than 12:00 (noon) will not be accepted. The County accepts no responsibility for delays in the mail. Bids are to be mailed or delivered to:

**COBB COUNTY PURCHASING DEPARTMENT
1772 COUNTY SERVICES PARKWAY
MARIETTA, GA 30008-4012**

**All bid prices shall be submitted on the Bid Form included in the bid/proposal.
Any revisions made on the outside of the envelope WILL NOT be considered.**

PLEASE CHECK bid specifications and advertisement for document requirements.

Documents/Forms listed below **MUST** be submitted when required.

Omission of these documents / forms will cause your bid/proposal to be declared **NON-RESPONSIVE**.

- **BID SUBMITTAL FORM**
 - ▶ *Official Signature is required on this form guaranteeing the quotation.*
- **CONTRACTOR AFFIDAVIT and AGREEMENT - Exhibit A (REQUIRED)**
 - ▶ *Affidavit **MUST** be signed, notarized and submitted with any bid requiring the performance of physical services. If the affidavit is not submitted at the time of the bid, bid will be determined non-responsive and will be disqualified.*
- **BID BOND (REQUIRED)**

If your firm is classified as a Disadvantaged Business Enterprise (DBE) please complete Exhibit B with bid response. A Disadvantaged Business Enterprise (DBE) is generally defined as a Female, Black American, Hispanic American and any other minority owned business.

All vendors are required to submit the ORIGINAL AND AT LEAST one (1) duplicated copy of any bid submitted to Cobb County. Please refer to your bid specifications to determine if more than one (1) copy is required. Non-submission of a duplicate copy may disqualify your bid/proposal.

A “SEALED BID LABEL” has been enclosed to affix to your bid. This label **MUST** be affixed to the outside of the envelope or package, **even if it is a “NO BID” response**. Failure to attach the label may result in your bid being opened in error or not routed to the proper location for consideration. No bid will be accepted after the date and time specified.

Thank you in advance for your cooperation.

ADVERTISEMENT FOR BIDS
COBB COUNTY PURCHASING DEPARTMENT

BID OPENING DATE: APRIL 12, 2012

Sealed bids from qualified contractors will be received before 12:00 NOON, April 12, 2012 in the Cobb County Purchasing Department, 1772 County Services Parkway, Marietta, GA 30008 for furnishing all labor, materials, equipment, appliances, etc. pursuant to the plans, specifications, condition and addenda for:

SEALED BID # 12-5654
PURCHASE AND INSTALLATION OF NEW HVAC SYSTEM FOR THE
COBB COUNTY HEALTH DEPARTMENT HEADQUARTERS
COBB COUNTY PROPERTY MANAGEMENT DEPARTMENT

PRE-BID/PROPOSAL MEETING: MARCH 27, 2012 @ 1:00
COBB COUNTY PURCHASING DEPARTMENT
1772 COUNTY SERVICES PARKWAY
MARIETTA, GEORGIA 30008

No bids will be accepted after the 12:00 noon deadline.

Bids are opened at 2:00 p.m. at Cobb County Purchasing Department, 1772 County Services Parkway, 2nd Floor, Bid/Meeting Room, Marietta, GA 30008.

All contractors wishing to submit bids for this work must submit a qualification statement form (in bid package) to be considered. Proposals must be accompanied by bid security in the amount not less than five percent (5%) of the base bid. Performance Bond and Labor and Material Payment Bond, or other security instruments as allowed by law each in the amount equal to 100% of the contract sum will be required of the successful bidder. Bonds must be written by a surety company licensed to do business in the State of Georgia, have a "Best's" rating of "A" or better, appear on the current U.S. Treasury Department list of sureties that are acceptable on bonds for the federal government (circular 570), and have recommended bonds limits equal to or in excess of those required for this project; otherwise acceptable to the owner.

The Georgia Security and Immigration Compliance Act Affidavit form must be submitted with all bid packages involving the "performance of physical services" in order to be considered.

No proposal may be withdrawn for a period of sixty (60) days after date of bid opening, unless otherwise specified in the bid documents. Cobb County will consider the competency and responsibility of bidders in making the award. Cobb County reserves the right to reject any and all bids, to waive informalities and technicalities, to reject portions of the bids, and to award contracts in a manner consistent with the County and the laws governing the State of Georgia.

This solicitation and any addenda are available for download in PDF format on the Cobb County Purchasing website. www.purchasing.cobbcountyga.gov.

Advertise: March 16, 23, 30, 2012
 April 6, 2012



BID SUBMITTAL FORM

SUBMIT BID/PROPOSAL TO:
COBB COUNTY PURCHASING DEPARTMENT
1772 COUNTY SERVICES PARKWAY
MARIETTA, GA 30008-4012

BID/PROJECT NUMBER: 12-5654
PURCHASE AND INSTALLATION OF NEW HVAC SYSTEM
AT THE COBB HEALTH DEPARTMENT HEADQUARTERS
COBB COUNTY PROPERTY MANAGEMENT DEPARTMENT

DELIVERY DEADLINE: APRIL 12, 2012 BEFORE 12:00 (NOON) EST
(NO BIDS/PROPOSALS WILL BE ACCEPTED AFTER THIS DEADLINE).

BID OPENING DATE: APRIL 12, 2012 @ 2:00 P.M. IN THE PURCHASING DEPARTMENT BID ROOM.

BUSINESS NAME AND ADDRESS INFORMATION:

Company name: _____

Contact name: _____

Company address: _____

E-mail address: _____

Phone number: _____ Fax number: _____

NAME AND OFFICIAL TITLE OF OFFICER GUARANTEEING THIS QUOTATION:

(PLEASE PRINT/TYPE) NAME _____ TITLE _____

SIGNATURE OF OFFICER ABOVE: _____
(SIGNATURE)

TELEPHONE: _____ FAX: _____

BIDDER WILL INDICATE TIME PAYMENT DISCOUNT: _____

BIDDER SHALL INDICATE MAXIMUM DELIVERY DATE: _____

Bids received after the date and time indicated will not be considered. Cobb County reserves the right to reject any and all bids, to waive informalities, to reject portions of the bid, to waive technicalities and to award contracts in a manner consistent with the county and the laws governing the state of Georgia.

The enclosed (or attached) bid is in response to Bid Number 12-5654; is a firm offer, **as defined by section O.C.G.A. (s) 11-2-205 of the code of Georgia (Georgia laws 1962 pages 156-178)**, by the undersigned bidder. This offer shall remain open for acceptance for a period of 60 days calendar days from the bid opening date, as set forth in this invitation to bid unless otherwise specified in the bid documents.

NOTICE TO BIDDERS - - BID QUOTES MUST INCLUDE INSIDE DELIVERY CHARGES

Advertise Dates: March 16, 23, 30, 2012
April 6, 2012

SEALED BID LABEL

SEALED BID ENCLOSED

DELIVER TO:
COBB COUNTY PURCHASING
1772 County Services Parkway
Marietta, GA 30008-4012

SEALED BID # 12-5654 DATE: April 12, 2012

BIDS MUST BE RECEIVED BEFORE 12:00 NOON

DESCRIPTION:

PURCHASE AND INSTALLATION OF NEW HVAC SYSTEM
AT THE COBB HEALTH DEPARTMENT HEADQUARTERS
COBB COUNTY PROPERTY MANAGEMENT DEPARTMENT

PLEASE ATTACH LABEL TO OUTSIDE OF BID PACKAGE



Cobb County...Expect the Best!

"STATEMENT OF NO BID"

COBB COUNTY PURCHASING DEPARTMENT
1772 COUNTY SERVICES PARKWAY
MARIETTA, GA 30008

TO ALL PROSPECTIVE BIDDERS:

Because of the many requests to be placed on our vendors' list, we are continuously updating the list. While we want to include all bona fide vendors, we do not want to mail bids to those vendors who may no longer be interested in participating in our bidding process.

If you do not choose to respond to the attached Invitation to Bid/Request for Proposal, please fill out the form below indicating whether or not you want to be retained on our current vendor list.

Vendors who do not respond in any way (by either submitting a bid or by returning this form) over a period of one year may be removed from the current vendor list.

Vendors who do not wish to bid often return the entire bid package, sometimes at considerable postage expense. Returning the entire bid package is not necessary. Simply return this form.

Thank you for your cooperation.
Cobb County Purchasing Department

"STATEMENT OF NO BID"

**SEALED BID NUMBER 12-5654
PURCHASE AND INSTALLATION OF NEW HVAC SYSTEM
AT THE COBB HEALTH DEPARTMENT HEADQUARTERS
COBB COUNTY PROPERTY MANAGEMENT DEPARTMENT**

If you do not wish to respond to the attached Invitation to Bid/Request for Proposal, please complete this form and mail/fax to: **Cobb County Purchasing Department, Attention: Sealed Bid Department, 1772 County Services Parkway, Marietta, GA. Fax # 770-528-1154**

I do not wish to submit a bid/proposal on this solicitation.

I wish to be retained on the vendor list for this commodity or service: Yes_____ No _____

Please PRINT the following:

Company

Representative

You are invited to list reasons for your decision not to bid: _____



Cobb County...Expect the Best!

INVITATION TO BID

**SEALED BID # 12-5654
PURCHASE AND INSTALLATION OF NEW HVAC SYSTEM
AT THE COBB HEALTH DEPARTMENT HEADQUARTERS
COBB COUNTY PROPERTY MANAGEMENT DEPARTMENT
BID OPENING DATE: APRIL 12, 2012**

**PRE-PROPOSAL CONFERENCE: MARCH 27, 2012 @ 1:00 P.M. (E.S.T.)
COBB COUNTY PURCHASING DEPARTMENT BID ROOM
1772 COUNTY SERVICES PARKWAY
MARIETTA, GA 30008**

BIDS ARE RECEIVED IN THE
COBB COUNTY PURCHASING DEPARTMENT
1772 COUNTY SERVICES PARKWAY
MARIETTA, GEORGIA 30008

BEFORE 12:00 (NOON) BY THE BID OPENING DATE

BIDS WILL BE OPENED IN THE COBB COUNTY PURCHASING DEPARTMENT
BID/MEETING ROOM AT 2:00 P.M.

**VENDORS ARE REQUIRED TO SUBMIT THE ORIGINAL AND 1 COPIES OF BID
(UNLESS OTHERWISE SPECIFIED IN BID SPECIFICATIONS)**

N.I.G.P. COMMODITY CODE: 91450

NAME: _____

ADDRESS: _____

REPRESENTATIVE: _____

PHONE: _____ FAX: _____

E-MAIL _____

NOTE: The Cobb County Purchasing Department will not be responsible for the accuracy or completeness of the content of any Cobb County Invitation to Bid or Request for Proposal or subsequent addenda thereto received from a source other than the Cobb County Purchasing Department.

INVITATION TO BID

Purchase and Installation of New HVAC System
Cobb Health Department Headquarters

At

1650 County Services Parkway
Marietta, GA 30008

Cobb County Property Management Department

SEALED BID NUMBER: 12-5654

**Invitation to Bid
Purchase and Installation of New HVAC System
at the Cobb Health Department Headquarters
Cobb County Property Management Department
Sealed Bid #12-5654**

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**Invitation to Bid
Purchase and Installation of New HVAC System
at the Cobb Health Department Headquarters
Cobb County Property Management Department
Sealed Bid # 12-5654**

INTRODUCTION

The Cobb County Board of Commissioners (Owner) is soliciting competitive sealed bids from experienced contractors for the **Purchase and Installation of New HVAC System at the Cobb Health Department Headquarters located at 1650 County Services Parkway Marietta, Georgia 30008.**

Bids shall be received before **12:00 noon on April 12, 2012** at the Cobb County Purchasing Department located at 1772 County Services Parkway, Marietta, Georgia 30008. Any bid received after this time will not be considered.

Bids, timely received, will be opened at 2:00 p.m. on April 12, 2012 at the offices of the Cobb County Purchasing Department, 1772 County Services Parkway, Marietta, Georgia 30008.

Pre-Bid Conference:

A Pre-Bid Conference will be held at the Cobb County Purchasing Department Bid Room, 1772 County Services Parkway, Marietta, Georgia 30008 on March 27, 2012 at 1:00 p.m. for the purpose of answering questions of prospective bidders. It is to the benefit of the bidders to attend. Information will be distributed. Bidders may elect not to attend at their hazard, but should realize that they will be deemed to have received the information and be bound by any additional terms.

Written inquiries regarding this Invitation to Bid must be addressed to:
Cobb County Purchasing Department
1772 County Services Parkway
Marietta, Georgia 30008
Fax: 770-528-1154
Email: purchasing@cobbcounty.org

Deadline for question submittal is 5:00 P.M on April 3, 2012.

Vendors are to submit an original and one (1) copy to the Cobb County Purchasing Department located at 1772 County Services Parkway Marietta, Georgia 30008.

SPECIAL CONDITIONS

1. Bid Form:

In order to receive consideration, make bids in strict accordance with the following:

- a. Make bids upon the form provided therefore, properly signed and with all items bid, filled in, and completed. Do not change, alter or add words to the Bid Form. Unauthorized conditions, limitations, or provisions attached to the bid may be cause for rejection.
- b. Bids will only be accepted in a sealed envelope. No telegraphic bids or telegraphic modifications of a bid will be accepted. Modifications to the bid written on the face of the envelope will not be considered.

2. Bonds and Bid Security:

- a. Bid security in the form of a bid bond, cashier's check or certified check for not less than 5% of the base bid amount must accompany each bid. The successful bidder's security will be retained until signed Contract and required certificates of insurance and bonds have been received by the Owner. No other form of bid security will be accepted.
- b. The Owner reserves the right to retain the bid securities of all bidders until the successful bidder enters into a contract with the Owner or until **60 days** after bid opening, whichever is sooner. Other bid securities will be returned as soon as practical. If any bidder refuses to enter into a contract or is unable due to the inability to timely provide insurance certificates, bonds, etc., with the Owner; the Owner may retain the bid security as liquidated damages but not as a penalty.
- c. Prior to signing the Contract, the Owner will require the successful bidder to secure and post a Performance Bond and Labor and Material Payment Bond utilizing the Owner's forms, each in the amount equal to 100% of the Contract Sum. Bonds must be written by a surety company licensed to do business in the State of Georgia, have a "Bests" rating of "A" or better, appear on the current U.S. Treasury Department list of sureties that are acceptable on bonds for the federal government (Circular 570), and have recommended bond limits equal to or in excess of those required for this project; or otherwise acceptable to the Owner. Attorneys-in-fact who sign bonds shall file with the bond a certified copy of their power-of-attorney to sign such bond. This Certificate shall include date of bond and shall be written by a surety company acceptable to the Owner and licensed to do business in the State of Georgia.

3. Examination of the Documents and Site of Work:

Before submitting a bid, each bidder shall examine the Documents carefully, shall read the Project Manual as well as all proposed Contract Documents and shall visit the site of the

Work. Each bidder shall fully inform himself as to the conditions existing and limitations under which the Work is to be performed, and shall include in his bid a sum to cover the cost of items necessary to perform the Work as set forth in the proposed Contract Documents. No allowances will be made to a bidder because of lack of such examination or knowledge. The submission of a bid will be considered as conclusive evidence that the bidder has made such examination.

4. Proof of Competency:

All contractors wishing to submit bids for this work must submit a Qualification Statement to the Cobb County Purchasing Department with their bid proposal. This form is provided as part of the Bid Form. A bidder may be required to furnish additional evidence satisfactory to the Owner that he and his proposed subcontractors have sufficient means and experience in the types of work called for to assure completion of the Contract in a satisfactory manner.

5. Execution of the Agreement:

- a. The form of agreement between the Owner and the successful bidder will be provided to the bidder. A blank form is attached for review by all bidders.
- b. The bidder to whom the Contract is awarded shall, within ten days after notice of award and receipt of Agreement forms from the Owner, sign and deliver required copies to the Owner.
- c. At or prior to the delivery of the signed Agreement, the successful bidder shall provide to the Owner those Certificates of Insurance required by the Contract Documents and such Labor and Material Payment Bonds and Performance Bonds as are required by the Owner. Bonds and Certificates of Insurance shall be approved by the Owner before the successful bidder may proceed with the Work. Successful bidder will be issued a formal "Notice to Proceed" to formalize the date of commencement and establish the contract completion date.

6. All work performed in conjunction with these Contract Documents shall be in strict compliance with the Americans with Disabilities Act as well as "Year 2010 Compliant".

7. Miscellaneous Project Requirements:

- a. Materials and system types may designate specified manufacturers and models. *Substitution will be allowed if demonstrated by vendor to be equal or superior.* All materials incorporated into the work shall be new unless otherwise specified herein or approved in special circumstances by Owner or Architect.
- b. Cobb County Commissioners are required to make certain decisions that may come up during the course of the job. Depending on the timing, this could take several weeks before an available scheduled commission meeting.
- c. The Contractor represents that any reference by the Contract Documents to Cobb County as supplying utilities, permits, licenses, approvals, procedures or items of any nature

whatsoever are included with the Contractor's cost and shall not be construed to mean that the cost of such items will be paid by Cobb County. Contractor is completely responsible for any and all costs related to or levied as a result of this project. This also includes but is not limited to costs such as electrical power, gas, heat, light, water, sewer, telephone, temporary and permanent meters and fees of all types, etc.

- d. During the *construction* of the project, Contractor shall address construction concerns and questions to the **Cobb County Property Management Department** and shall not take direction from other persons or departments that may visit the site from time to time.

It is the Owner's intention that the Contractor take the Bid Documents as they are and provide a complete facility ready to be used as a completed project. Any additional requirements that the Contractor may require to totally complete the project to a move-in condition are the responsibility of the Contractor. This may include but is not limited to additional plan information, associated work not indicated, required exit sign and fire extinguishing/detection equipment, engineering stamps, protection of existing materials and equipment, securing and paying for all permits, fees, certificates of occupancy, etc. The owner has no other contracts or contractors involved in this project. This contract's intent is to complete all work of all trades that may be necessary per owner's drawings and specifications.

- e. All costs related to the preparation, submittal, etc., of this bid by the bidder is the responsibility of the bidder and will not be assumed in full or in part by the Owner. The Owner makes no representation or guarantee by the issuance of this request for bids that this project will be funded and/or performed.
- f. Omissions: Omissions and Errors from the drawings, and /or specifications, or the mis-description of details of work which are manifestly necessary to carry out the intent of the drawings and/or specifications, or which are customarily performed, shall not relieve the Contractor from performing such omitted or mis-described details of the work, but they shall be performed as if fully and correctly set forth and described in the drawings and specifications
- g. Notice of Discrepancies: The Contractor shall check all drawings and specifications furnished him/her immediately upon their receipt and shall notify, in writing, to the Owner of any discrepancies prior to deadline for submitting inquiries stated in the bid.

The Contractor shall compare all drawings and verify the figures before laying out the work and will be responsible for any errors which might have been avoided thereby.

- h. Contractor shall substantially complete all work of the contract within 120 calendar days of Owner's Notice to Proceed. Milestone dates include the installation and the start up of RTU #1 and RTU #3 12 weeks (84 calendar days) and RTU #2 and CU1 12 weeks (98 calendar days) from Owner's Notice to proceed. At no time will the facility be without all existing and new units fully operating during normal business hours. Contractor shall provide a detailed schedule coordinated with the Owner's overall schedule including the scheduled weekend changeovers and start ups of the new units, motor and VFD's. The owner reserves the sole right to modify the milestones and portions of the schedule as necessary. Should the Contractor fail to substantially complete the entire work under this

contract per the specified schedule, he shall pay Owner liquidated damages of \$250.00 per calendar day for each consecutive calendar day until project is complete; which sum is agreed upon as a reasonable and proper measure of damages which owner will sustain per diem by failure of Contractor to complete work within time as stipulated; it being recognized by Owner and Contractor that the injury to Owner which could result from a failure of Contractor to complete on schedule is uncertain and cannot be computed exactly. In no way shall costs for liquidated damages be construed as a penalty on the Contractor. Contractor shall not be entitled to any compensation should he finish early.

PLANS AND SPECIFICATIONS

The project includes everything shown on the plans and specifications which includes but is not limited to all HVAC, electrical, etc, and miscellaneous general construction work as may be required.

SECTION 15000

HVAC GENERAL

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Refer to Division 1 - General Requirements and any and all Supplementary or Special Requirements, all of which apply to work described in Division 15 – HVAC as if written in full herein.
- B. The scope of work described in these Specifications and/or indicated on the Drawings shall include the furnishing of all materials, equipment, appurtenances, accessories, connections, labor, etc. required and/or necessary to completely install, clean, inspect, adjust, test, balance and leave in safe and proper operating condition all HVAC systems. All HVAC work shall be accomplished by workmen skilled in the various trades involved.
- C. The Drawings and Specifications are complementary to each other and what is called for by one shall be as binding as if called for by both. If a discrepancy exists between the Drawings and Specifications, the higher implied cost shall be included in the bid, and the Architect shall be notified of the discrepancy in writing.

1.02 CODES AND STANDARDS

- A. All HVAC work shall conform to all ordinances and regulations of the City, County and State where the work will take place, including the requirements of all authorities having jurisdiction. The following codes, standards and references shall be observed as a minimum:
 - 1. The 2006 International Codes
 - 2. State Amendments to the Code
 - 3. National Fire Protection Association (NFPA) Standards and Guidelines
 - 4. Local and State Fire Marshal requirements
 - 5. Local Building and Inspection Department requirements
 - 6. American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc. (ASHRAE)
 - 7. Sheet Metal and Air Conditioning Contractors' National Association, Inc. (SMACNA) Manuals
 - 8. Underwriters Laboratories Inc. (UL)
 - 9. Americans with Disabilities Act (ADA)
- B. If Code or other requirements exceed the provisions shown on the Contract Documents, the Engineer shall be notified in writing. Where requirements of the Contract Documents exceed Code requirements, work shall be furnished and installed in accordance with the Contract Documents. Any work done contrary to these requirements shall be removed and replaced at the Contractor's expense.

1.03 WORK INCLUDED

The HVAC Systems installed and work performed under this Division of the Specifications shall include, but not necessarily be limited to:

A. Airside Systems

1. Equipment: including fans, unitary air conditioners, air handling units, fan-coil units, make-up air units, dedicated outdoor air units, furnaces, split systems, etc.
2. Ductwork and Accessories: including sheet metal, duct-board, kitchen hood and dishwasher exhausts, flexible ductwork, fire and smoke dampers, access doors, etc.
3. Air Terminal Devices: including powered induction units, variable air volume valves, etc.
4. Air Distribution Devices: including louvers, registers, grilles, diffusers, etc.

B. Refrigerant and Water Systems

1. Equipment: including pumps, air separators, expansion tanks, water chillers, cooling towers, heat exchangers, boilers and space heating water heaters, feed-water systems, condensing units, etc.
2. Piping, Tubing and Accessories: including pipe, refrigerant tubing, valves, solenoids, thermal expansion valves, strainers, air vents, pipe and equipment drains, condensate drains, etc.

C. Equipment, Ductwork and Piping Supports

1. Equipment Mounts: including roof curbs, concrete housekeeping pads, equipment rails, miscellaneous steel, etc.
2. Hangers and Support Devices: including inserts, hanger rods, unistrut, cross-bracing, anchor bolts, pipe anchors, restraints, etc.
3. Vibration Isolation and seismic restraint: including inertia bases, flexible couplings, expansion devices, snubbers, springs, waffle pads, seismic restraints, etc.

- D. Insulation
 - 1. Ductwork Insulation: including exterior duct wrap, internal duct liner, fire wrap, etc.
 - 2. Piping and Equipment Insulation: including preformed, board and wrap.
- E. Miscellaneous HVAC Equipment: Unit heaters, wall heaters, roof hoods, heat tracing, etc.
- F. Automatic Temperature Controls
 - 1. Decentralized: including all thermostats, control dampers, control valves, programmable controllers, line and low-voltage wiring, smoke detectors, pressure sensors, gas sensors, control logic, etc.
- G. Labor and Equipment: including project management, supervision, tradesmen, lifts, fork-trucks, cranes, scaffolding, saws, wrenches, etc.
- H. Equipment and Valve Identification
- I. Start-up and Commissioning
- J. Demonstration and Owner Training
- K. Testing, Adjusting and Balancing

1.04 ENGINEER'S DRAWINGS

- A. The locations, arrangement and extent of equipment, devices, ductwork, piping, and other appurtenances related to the installation of the HVAC work shown on the Drawings are approximate and define the intent of the design. The Contractor shall not scale Engineer's Drawings, but shall refer to the architectural drawings for exact dimensions of building components. Should a conflict exist between the architectural and engineering drawings regarding dimensions and scale, the Contractor shall notify the Architect of the discrepancy.
- B. Materials, equipment or labor not indicated but which can be reasonably inferred to be necessary for a complete installation shall be provided. Drawings and Specifications do not undertake to indicate every item of material, equipment, or labor required to produce a complete and properly operating installation.

1.05 EQUIPMENT, MATERIALS AND BID BASIS

- A. Manufacturers' names, model numbers, etc. cited on the Drawings and in the Specifications are for the purpose of describing type, capacity, function and quality of equipment and materials required. All project design and coordination between disciplines has been performed as if the named manufacturer and specific piece of equipment will be provided to the project by the Contractor.
- B. Alternate equipment and/or materials other than that named on the Drawings and in the Specifications may be proposed for use, but all equipment and materials shall conform entirely to the specified base items. Proposed alternate equipment shall be substantially equal in size, weight, construction and capacity. Alternate equipment and materials shall be submitted only as full equivalent to the equipment and materials specified, with sufficient supportive documentation and technical literature to demonstrate quality, performance, and workmanship without doubt or question. Requests for prior approval of alternate products shall be made at least ten (10) days prior to the bid date and as required by Division 1 - General Requirements. The Engineer shall consider the use of the alternate equipment based on the supportive documentation made available to him, and shall approve or disapprove any proposed alternates. The decision of the Engineer shall, in all cases, be final.
- C. The Contractor shall coordinate the installation of all HVAC equipment proposed for use in this project with all building trades (architectural, structural, electrical, etc.). Coordination shall be accomplished prior to, and shall be reflected in, the equipment submittals for approval. When the Contractor requests substitution of alternate equipment, it is with the knowledge that he shall be responsible for any and all costs required by the substitution, including necessary engineering and construction revisions in his or any other contract or trade to satisfy the design intent shown on the Plans and described in the Specifications.

1.06 SUBMITTALS

- A. The Contractor shall prepare, submit and obtain Engineer's review of all manufacturers' data on the HVAC equipment and systems prior to ordering, purchasing or installing any equipment or materials. Two (2) hard copies of the complete submittal are required, one of which will be reviewed and returned by the engineer. Electronic submittals (e.g. .pdfs, etc.) may be acceptable, if approved by Cobb County. All submittals shall be transmitted simultaneously in hard ring binders (or in a single .zip file), with the associated specification sections cited and the items submitted clearly identified. Partial submittals will be returned without review. Submittals, as a minimum, shall include:
 - 1. All HVAC items scheduled on the Drawings
 - 2. Equipment arrangement, ductwork and piping drawings. Contractor drawings shall be prepared at a minimum scale of $1/8" = 1'-0"$. A scale of $1/4" = 1'-0"$ scale is preferred. Drawings shall be indicative of actual equipment purchased and shall show all offsets, transitions, fittings, dampers, valves, hanger locations, etc. Sections are required in spatially tight areas (e.g. kitchens, laundries,

central plants, mechanical rooms, etc.) The following will guide the Contractor as to minimum drawing detail required:

- a. Clearly indicate top and bottom of duct and pipe elevations. All elevations shall be coordinated as to not conflict with structural, plumbing, electrical and architectural trades.
 - b. Indicate all offsets (both vertical and horizontal).
 - c. Indicate graphically all duct and pipe joints and their lengths.
 - d. Submit duct and pipe-work fabrication schedule indicating duct size range with minimum duct material gauges, pipe schedule being used, duct and pipe connection joint types, section lengths, duct reinforcement type and spacing, etc.
 - e. Indicate graphically all ductwork to be fabricated with internal duct liner.
 - f. Indicate all insulation for ductwork and piping.
 - g. Indicate all dampers and valves as shown on design documents and called for in the specifications.
 - h. Indicate all flexible connectors where required by specifications and notes.
3. Dampers, louvers, air distribution devices
 4. Manufacturer's cut sheets of all piping and tubing materials
 5. Where split systems are used in a "long line application," submit manufacturer's refrigerant line set routing drawings and engineered calculations supporting the recommended suction and liquid line sizes. Identify and provide cut sheets of any and all accessories required to make the system complete, functional and reliable.
 6. Valves, thermometers, pressure gauges
 7. Roof curbs, equipment supports, hanger systems, vibration isolators, seismic restraints
 8. Control equipment, systems and diagrams
 9. Test and balance reports
- B. All submittal approvals required by any code or enforcement authority, insurance underwriter, etc. shall be obtained prior to being submitted to the Engineer.
- C. Review of submittals by the Engineer does not relieve the Contractor from responsibility for complying with all requirements of the Contract Documents. Furthermore, it shall be the responsibility of the Contractor to coordinate the requirements (roof penetrations, wall penetrations, floor penetrations, curbs, electrical, etc.) of all approved equipment with the other trades and disciplines.
- D. All submittals shall be identified by the equipment mark or tag identification numbers shown on the Contract Drawings. Each individual submittal item shall be marked to show which specification section pertains to the item.
- E. The Contractor shall provide a written statement confirming coordination of voltage requirements for all HVAC equipment requiring an electrical connection. Statement shall bear the names and signatures of the HVAC and electrical contractors. A photocopied reproduction of the below statement is acceptable.

VOLTAGE COORDINATION STATEMENT

This statement is to confirm that the voltages of the equipment provided under this specification have been coordinated with the Electrical Drawings, as well as with the Electrical Contractor.

HVAC Contractor: _____

Project Manager Name: _____

Project Manager Signature/Date: _____

Electrical Contractor: _____

Project Manager Name: _____

Project Manager Signature/Date: _____

1.07 PERMITS

- A. The Contractor shall obtain all permits and inspections required for the installation of the HVAC work and pay all charges incident thereto. He shall deliver copies of all certificates of permit and inspection to the Architect.

1.08 COORDINATION OF TRADES

- A. The Contractor shall give full cooperation to other trades, and shall furnish all information necessary to permit the work of all trades to be installed satisfactorily and with the least possible interference or delay.
- B. Piping and other HVAC equipment shall not be installed without first coordinating the installation of same with other trades. The Contractor, at his own expense, shall relocate all uncoordinated ductwork, piping and other HVAC equipment installed should they interfere with the proper installation and mounting of electrical, plumbing equipment, ceilings and other architectural or structural finishes.
- C. The Contractor shall coordinate the elevations of all ductwork, piping and equipment above ceilings and in exposed areas with the work of all other disciplines prior to installation.
- D. In areas where more than one trade is required to use common openings in beams, joists, chases, shafts and sleeves for the passage of conduits, raceways, piping, ductwork and other materials, the Contractor must coordinate the positions of all piping and equipment to be furnished under this section so that all items including the materials and equipment of other trades may be accommodated within the space available.

- E. The HVAC Contractor shall confirm that his work does not interfere with the clearances required for finished columns, pilasters, partitions, walls or other architectural or structural elements as shown on the Contract Documents.
- F. Work that is installed under this Contract which interferes with the architectural design or building structure shall be removed and relocated as required at no additional cost to the Contract.

1.09 OPERATION AND MAINTENANCE MANUALS

- A. The Contractor shall prepare three (3) instruction manuals, one of which shall be submitted to the Architect for the Engineer's review and other two (2) delivered to owner.. Manuals shall describe installation, operation and maintenance of all HVAC equipment and shall include copies of control schematics, sequences of operation, function and operations of all components, as well as the Contractor's name, address, and telephone number. Manuals shall also contain one copy of all manufacturers' drawings, pamphlets, data, parts lists, and instruction manual for each piece of equipment. Upon approval, one copy shall be delivered to the Owner; one copy shall be kept by the Contractor. The instruction manuals including pamphlets and drawings are to be neatly bound in (a) 3-ring binder(s).
- B. The contractor shall also provide one (1) complete set of instruction manuals on digital media and delivered to owner.

1.10 AS-BUILT DRAWINGS

- A. The Contractor shall maintain a record of all changes in the work from that shown in the Contract Documents. The record shall be by red-line mark-up on the most current set of Engineer's Drawings kept in the field office. After all work is completed, the Contractor shall prepare a set of "as-built" reproducible drawings of similar type and quality as the Engineer's Drawings. As-built drawings shall accurately depict actual final arrangement of all HVAC items. As-built drawings shall be delivered to the Architect.

1.11 WARRANTY

- A. All equipment furnished and installed under this Contract shall be provided with the manufacturer's standard warranty unless otherwise noted.
- B. All reciprocating and scroll air conditioning compressors shall be provided with an extended 5-year parts warranty.
- C. The Contractor shall make good all defects in material, equipment, or workmanship disclosed within a period of one (1) year from date of building acceptance by the Owner. The phrase "make good" shall mean to furnish promptly, without charge, all work necessary to remedy the defects to the satisfaction of the Engineer.

PART 2 - PRODUCTS

2.01 GENERAL

- A. All equipment, materials, accessories, etc. used shall be new and of current production unless specified otherwise. Equipment not specified in the Engineer's Drawings shall be suitable for the intended use and shall be subject to approval by the Engineer.
- B. All equipment, products and materials shall be free of defects and shall be constructed to operate in a safe manner without excessive noise, vibration, leakage, or wear.
- C. All equipment shall bear the inspection Label of Underwriters Laboratories Inc.
- D. All equipment and material for similar applications or systems shall be provided from the same manufacturer unless noted otherwise.

2.02 ELECTRICAL WORK

- A. Except as otherwise specified or noted, electrical equipment used in HVAC systems shall be as specified herein.
- B. Motor controls, system controls, starters, pilot lights, push buttons, etc. shall be furnished by the HVAC Contractor complete as a part of the motor or apparatus that it operates. Electrical equipment shall be wired for the voltage shown on the Electrical Engineer's Drawings.
- C. Electric motors shall be high efficiency, open drip-proof type unless otherwise specified. Motors shall be standard NEMA continuous duty type and shall bear the UL Label. Motors shall be selected with a minimum of 15% safety factor greater than the fan brake/horsepower (e.g. 4.75 BHP would require a nominal 7-1/2 HP motor). The motor service factor shall not be used as part of the safety factor. All motors shall have thermal overload protection. Motors shall meet Table MG-1-12C of EPACT 1992.
- D. Motors controlled by a variable frequency drive (VFD) shall be inverter duty rated and fully compatible with the VFD provided.
- E. Starters for motors 1/3 HP and smaller shall be manual type, and for 1/2 HP and larger, shall be magnetic type. Starters shall be minimum size 0, combination type (with disconnect and lockable handle) with molded case circuit breaker. Starters for motors with remote or automatic control shall be magnetic. Relays, interlocks and auxiliary contacts shall be provided as specified and required.
- F. Magnetic motor starters shall be across-the-line, full voltage, non-reversing type unless otherwise indicated on the Drawings or specified herein. Starters for motors 75 HP and greater shall be solid state, reduced voltage type.
- G. Motor controls shall be either "Hand-Off-Auto" switches or "On-Off" push buttons with one indicating light. "Hand-Off-Auto" switches shall be provided for automatically controlled apparatus.

- H. Motor starters that are not an integral part of HVAC equipment shall be installed in conformance with Division 16 - Electrical requirements.
- I. Electrical power wiring to disconnects, starters, motors and similar devices shall be provided under the Electrical Section. All equipment requiring electrical power shall be installed with disconnect switches at each piece of equipment. Coordinate switch type (fused or non-fused) with equipment characteristics, manufacturer's recommendations and electrical drawings.
- J. The Contractor shall provide all system controls, control and interlock wiring 120 volts and less in conduits and in accordance with materials and installation requirements of Division 16 – Electrical.
- K. All starters shall be labeled on the face of the starter with a semi-rigid plastic laminate nameplate with 1" high white letters on a black background securely affixed to the equipment. The label shall indicate equipment served by the starter (equipment tag used on the Drawings). Labels shall be furnished and installed by the Contractor.
- L. All starters for 3-phase equipment shall have overload devices in each phase.
- M. Wiring diagrams shall be furnished by the Contractor.
- N. Acceptable manufacturers shall be General Electric, Square D, Cutler-Hammer, Siemens and Allen Bradley.

PART 3 - EXECUTION

3.01 GENERAL

- A. All equipment and materials shall be completely installed, adjusted, and fully operational with all accessories and connections.
- B. Equipment, piping, ductwork, etc. shall fit into the spaces provided in the building and shall be installed at such time and in such a manner as to avoid damage and as required by the job progress. The Contractor shall coordinate work with other trades and locate work described herein to avoid interferences with structural, electrical and architectural work. Equipment, accessories and similar items requiring normal servicing or maintenance shall be accessible.
- C. The Engineer reserves the right to direct the removal of any item which, in his opinion, does not present an orderly and reasonably neat or workmanlike appearance. Such removal and replacement shall be done when directed by the Engineer and without additional cost to the Owner.
- D. Listed mounting heights are to the finished bottom of the device unless otherwise noted.
- E. All work shall be designed and installed to comply with the requirements for the seismic design category and use group for the area in which the building is constructed.

3.02 STORAGE AND PROTECTION OF MATERIALS

- A. During construction, all equipment shall be properly protected against damage, defacing and freezing with shipping cartons, plastic sheeting, shipping covers, etc.
- B. All open ends of piping and equipment shall be sealed with nipples and caps, plugs, and test plugs until final connection to system is made.
- C. All equipment, piping and ductwork shall be protected to prevent entrance of foreign matter and debris by covering exposed openings during construction.
- D. Handle and store materials in accordance with manufacturer's and supplier's recommendations and in a manner to prevent damage to materials during storage and handling. Replace damaged materials.
- E. Equipment and materials shall not be installed until such time as the environmental conditions of the job site are suitable to protect the equipment or materials. Equipment or materials damaged or which are subjected to these elements are unacceptable and shall be removed from the premises and replaced.

3.03 CUTTING AND PATCHING

- A. The work shall include all cutting and patching required as part of the HVAC installation. Refer to Division 1 – General Requirements.

3.04 CONCRETE WORK

- A. Construct curbs, pads and similar supports for equipment where required.
- B. Provide 6" thick housekeeping pads for all floor mounted equipment, extending 6" beyond the area occupied by the equipment. Dowel pads to structural slab.
- C. Minimum compressive strength of concrete shall be same as specified for slabs on grade.
- D. Mix and install grout for HVAC equipment base bearing surfaces and anchors. Provide forms as necessary and place grout to completely fill equipment bases.

3.05 EQUIPMENT SUPPORTS

- A. Major equipment supports (structural steel frames, framed structural slab and wall openings, etc.) shall be furnished and installed by others; however, the HVAC work shall include furnishing and installation of all miscellaneous equipment supports, structural members, rods, clamps and hangers required to provide adequate support of all HVAC equipment.
- B. Unless otherwise shown on the Drawings, all HVAC equipment, piping, and accessories shall be installed level, square, and plumb.

- C. All equipment, piping, etc. supported by structural bar joists shall be supported only by the top chord of the joists. Hangers shall not be attached to the bottom chord of any joists.

3.06 PIPE AND DUCTWORK PENETRATIONS

- A. Sleeves shall be installed in all masonry or concrete walls, floors, roofs, etc. for pipe and ductwork penetrations. Sleeves for pipe shall be schedule 40 black steel. Sleeves for ductwork shall be 20-gauge galvanized steel. Sleeves shall be sized to provide a minimum of 1/4" clearance between the sleeve and pipe or duct. For insulated pipes or ducts, the clearance shall be between the sleeve and the insulation.
- B. As far as possible, all pipe and ductwork penetrations shall be provided for at the time of masonry or concrete construction. Where drilling is required, only core drills shall be used. Star drills shall not be used.
- C. All pipes penetrating walls or floors of any construction shall be installed with escutcheon plates on both sides of the penetration securely fastened to the wall or floor. In exposed areas, escutcheon plates shall be chrome plated. All escutcheon plates shall be sized to completely conceal the penetration.
- D. Ductwork penetrating walls or floors of any material shall be installed with closure plates on both sides of the penetration. Pipe penetrations through exterior walls shall be sealed weather-tight with expandable link type seals by Thunderline, Linkseal, or Engineer approved equal.
- E. All pipe and duct penetrations of fire, smoke, or fire and smoke-rated assemblies shall be fire-stopped as required to retain the integrity of the UL-rated assembly. Fire barrier products shall be as manufactured by Tremco, Hilti, 3M, Metacaulk, Nelson, or approved equal. Refer to Division 7 - Thermal and Moisture Protection.

3.07 FLASHING

- A. All piping and ductwork penetrating roofs shall be flashed in an approved manner, shall be watertight, and shall conform to the requirements detailed in Division 7 – Thermal and Moisture Protection.

3.08 EQUIPMENT LABELING

- A. All HVAC equipment shall be labeled. This shall include all central plant, air handling or air conditioning equipment, air terminals, and other similar and miscellaneous equipment.
- B. Labels for air terminals or other devices shall be located for optimum visibility through access panel or removed ceiling tiles.
- C. Equipment labeling shall be one of the following, unless noted or specified otherwise:

1. Permanently attached plastic laminated signs with 1" high lettering
2. Stencil painted identification, 2" high letters, with standard fiberboard stencils and standard black (or other appropriate color) exterior stencil enamel

3.09 VALVE TAGS

- A. Each valve in the HVAC system is to be provided with an individually numbered valve tag.
- B. Valve tags are to be brass or plastic laminate, 1-1/2" minimum diameter with brass chain and hook for securing to the valve.
- C. Valve tags will include a designation to indicate the appropriate system. Numbering shall be consecutive for each service of the hot, chilled, steam, condensate return, or condenser water systems.
- D. A printed list or schematic drawing shall be compiled for each system indicating the location and detailed description of the system or equipment served.
- E. One (1) copy of each list shall be framed and mounted at the location designated by the Building Engineer. An additional copy of each list is to be included in the Operations and Maintenance Manual.

3.10 CLEANING

- A. At all times, the premises shall be kept reasonably clean and free of undue amounts of waste, trash and debris by periodic cleaning and removal. After completion, all foreign material, trash and other debris shall be removed from the job site.
- B. After all equipment has been installed, but prior to testing and balancing, all equipment, piping, ductwork, etc. shall be thoroughly cleaned both inside and out.
- C. All water piping shall be chemically flushed and cleaned prior to circulating water through equipment.
- D. After cleaning, filters shall be installed where required and all systems shall be tested and balanced.
- E. After testing and balancing and just prior to Owner review and acceptance, all systems shall be finally cleaned and left ready for use.

3.11 PAINTING

- A. Painting will be done under Division 9 – Painting except as otherwise noted, but the HVAC Contractor shall leave all surfaces of work free of rust, dirt and grease.
- B. The HVAC Contractor shall touch-up any equipment scratched in shipment or during installation to match original finish. Touch-up painting of HVAC equipment shall be part of the HVAC work.

- C. Any visible ductwork through grilles, registers and diffusers shall be painted flat black.
- D. Provide one coat of rust preventive primer on all new structural steel supports and new ferrous surfaces not galvanized, including HVAC piping. Rust preventive painting shall be part of the HVAC work. Rust preventive paint shall be "Rust Destroyer" by Advanced Protective Products, Inc., Fairlawn, NJ, (201) 794-2000. Product shall have a 5-year warranty when applied directly over rust. Clean and prepare surface per manufacturer's recommendations.
- E. All painting and coating shall match the original finish and shall conform to the requirements detailed in Division 9 - Finishes.
- F. Do not paint over equipment nameplates, nonferrous hardware, accessories or trim.

3.12 PRESSURE TESTING

- A. Unless otherwise specified herein, all HVAC piping shall be tested as required by Code to 1-1/2 times the rated system pressure or 100 psig, whichever is greater. Care shall be taken to isolate all equipment not suitable for this test pressure by installing pipe caps or blank flanges at the equipment connections. All valves and fittings shall be tested under pressure.

3.13 PERFORMANCE AND DEMONSTRATION TESTS

- A. All testing and demonstration of any and all HVAC systems required for acceptance by any authorities having jurisdiction shall be included as part of the HVAC work. This shall include the furnishing of any and all testing equipment, smoke generation devices, and any other required equipment or accessories, and all necessary labor required to perform any required tests or demonstrations. The Contractor shall coordinate and verify all devices, equipment and sequence of testing and/or events with such authorities having jurisdiction. The Contractor shall perform a minimum of two (2) satisfactory preliminary tests or demonstrations prior to any formal tests and/or demonstrations for any code authorities, and shall give a minimum of five (5) days advance notice to the Engineer of any and all preliminary tests and/or demonstrations, indicating the date and time of such tests.

3.14 TRAINING

- A. Upon completion of the work, the Contractor shall conduct operation and training session(s) for the Owner's key operating personnel. These sessions shall be of sufficient length and duration to adequately explain the design intent and proper operating and maintenance techniques for all HVAC equipment and systems. After these sessions are completed, the Contractor shall provide a copy of a signed statement by the Owner that his personnel are thoroughly familiar with and capable of operating all HVAC equipment and systems.

END OF SECTION

SECTION 15010

HVAC DEMOLITION, ADDITIONS & RENOVATIONS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Refer to specification section 15000 - HVAC General, all of which applies to work described in this section as if written in full herein.
- B. Furnish all labor, equipment, materials and incidentals required to remove and/or make-safe the existing equipment, pipe, fittings, valves and appurtenances indicated on the Drawings, and not required for the proper operation of the new HVAC system. Removal will be consistent with the final configuration of the new systems as indicated and as required by the Architect. The equipment and piping identified shall be removed from their present locations and shall be removed from the site or stored as specified hereinafter.
- C. Perform all work required to tie-in the new work to the existing systems and to adapt the existing systems to the new work. All existing systems may not be shown or indicated on plans but the contractor is responsible for being familiar with existing systems and the reconnection as necessary.
- D. Before removal of any electrically operated equipment, coordinate carefully to assure that power and control wiring has been disconnected and/or locked out, tagged out and made-safe.
- E. It should be noted that some HVAC systems are to remain. If any of these systems are damaged during the progress of construction or demolition, they shall be repaired or replaced to the satisfaction of the Architect without incurring additions to the Contract.

PART 2 - PRODUCTS - Not Applicable

PART 3 - EXECUTION

3.01 GENERAL

- A. Prior to the ordering or purchasing of any equipment or materials or the layout or installation of any new work, the Contractor shall examine the premises and verify any and all of the existing conditions under which he will be obliged to operate, or that will in any manner affect the work under this Contract.

- B. Unless specifically noted to be removed, existing equipment, piping, ductwork, etc. is to remain. Any equipment, piping or appurtenances removed which are necessary for the operation of the existing system shall be replaced to the satisfaction of the Architect without incurring additions to the Contract.
- C. When encountered in work, protect, brace, and support existing, active services as necessary for proper execution of the work. Relocate existing, active services encountered as necessary or as shown on the Contract Documents. Do not prevent or disturb operation of active services that are to remain. Notify all utility companies or municipal agencies having jurisdiction prior to modifying services.
- D. Where work makes temporary shut down of services unavoidable, shut down at night or at such times as approved by the Owner, which will cause the least interference with scheduled operations. Arrange work to assure that services will be shut down only during time actually required to make the connection to the existing work.
- E. All ductwork, pipe, fittings, tubing, insulation, hangers and supports, etc. that are demolished or damaged shall become the property of the Contractor upon removal. The materials shall be removed immediately from the site and shall not be reused.
- F. Any existing property damaged by the Contractor while performing any work shall be replaced with new materials to match existing conditions; however, any existing insulation that is damaged shall be replaced as specified for new insulation.
- G. Wherever piping is removed for disposition, adjacent pipe and headers that are to remain in service shall be blanked off or plugged and then anchored in an approved manner. Piping passing through floors that is to be removed shall be cut or ground flush with the floor and filled with grout flush with adjacent floor.
- H. Equipment to be retained by the Owner shall be carefully removed from the present location, cleaned, packaged and immediately stored at a place on-site as designated by the Owner.
- I. The Contractor shall take all necessary precautions against damaging the material and equipment to be stored. The Contractor shall repair all damage resulting from his operations, as directed by and to the satisfaction of the Architect. Itemized lists of materials removed and stored shall be recorded and submitted to the Owner at the completion of construction. The list shall include a physical description of all items, how they are packaged and where they are stored.
- J. Where work under this project requires extension, relocation, reconnection or modifications to existing equipment or systems, the existing equipment or systems shall be restored to their original and operating condition.
- K. Where pipes, control devices and wiring which are to remain in service, but are disconnected for the removal or relocation of equipment or because of building alterations, they shall be reconnected.
- L. All thermostats and temperature sensors that are to remain in service shall be removed

and stored in a safe place or covered in plastic and protected from construction/demolition. Prior to construction, catalog all existing thermostats to be reused and verify proper operation. Notify the Architect at this time of any inoperable thermostats. Any thermostats damaged or found to be inoperable at turnover shall be replaced by the Contractor at no additional cost.

END OF SECTION

SECTION 15055

SPLIT SYSTEM AIR CONDITIONING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Furnish and install direct expansion air cooled split system units of the size and capacity shown on the equipment schedules.
- B. Units shall be factory matched with air handling units for compatibility and shall be rated in accordance with ARI standards.
- C. Equipment schedules and specifications are based on JCI series units. Other manufacturers of equal quality and capacity may be submitted to the Engineer for approval. When substitution of equipment is made, the Contractor shall be responsible for the costs of any item and engineering and construction revisions necessary in his or any other contract that may be required to satisfy plans and specifications.
- D. Equal products: Carrier, Lennox, Trane.

PART 2 - PRODUCTS

2.01 OUTDOOR UNIT

- A. Outdoor units shall be complete, including cabinet, hermetic compressor, nonferrous condenser coil with guard, condenser fan and motor, refrigerant reservoir or receiver, charging valve, controls, refrigerant holding charge, heavy duty permanently lubricated motors with built-in thermal overload protection, locked rotor, over and under voltage protection, high pressure cutout with auto-reset, motor starters and contactors, compressor protection, crankcase heater, transformer, filter/drier, vibration isolation, and other required components. Casings shall be constructed of zinc-coated steel, double phosphatized and finished with baked enamel for positive weatherproof protection. Removable panels shall provide access to all components from one side of the unit. Drain holes shall be provided in the base for positive drainage. Compressor shall be capable of operation down to 10 degrees F ambient and shall have a 5-year warranty.

2.02 INDOOR UNIT

- A. Air handling evaporator unit shall be complete, including cabinet, nonferrous DX cooling coil, centrifugal fans, drives, permanently lubricated motors with thermal overload protection, 1" thick disposable filter(s), expansion valves, solenoid valves, refrigerant charge, insulated galvanized drain pan and other required components. Casings shall be constructed of heavy gauge steel, zinc coated to prevent corrosion and be painted with baked enamel and internally insulated with glass fiber material.

2.03 ELECTRIC HEAT

- A. Air handling evaporator unit shall be complete, including cabinet, nonferrous DX cooling coil, centrifugal fans, drives, permanently lubricated motors with thermal overload protection, 1" thick disposable filter(s), expansion valves, solenoid valves, refrigerant charge, insulated galvanized drain pan and other required components. Casings shall be constructed of heavy gauge steel, zinc coated to prevent corrosion and be painted with baked enamel and internally insulated with glass fiber material.

PART 3 - EXECUTION

3.01 GENERAL

- A. Units shall be installed as shown on the Drawings and in strict accordance with manufacturer's recommendations.
- B. For roof mounting, provide equipment supports, (minimum two) for each condensing unit with integral flashing cant. Equipment rail as manufactured by Roof Products and Systems Corp. or equal by Pate or Thycurb. Secure condensing unit to equipment support.
- C. For grade mounting, provide 6" thick concrete pad 6" larger all around than the condensing unit.
- D. Condensing units shall be installed level.
- E. Units shall be installed to allow adequate service to all components.

END OF SECTION

SECTION 15060

REFRIGERANT PIPING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Furnish and install all materials, labor, accessories, etc. shown on the Drawings and specified herein to completely install all piping systems.
- B. Refrigerant piping shall meet the requirements of the American National Standard Safety Code for Mechanical Refrigeration (ANSI/ASHRAE 15-78, B9.1), and the Code for Pressure Piping (ANSI B31.5).

PART 2 - PRODUCTS

2.01 REFRIGERANT PIPING

- A. Piping shall be minimum type "L" or refrigeration service copper tubing and shall conform to ANSI H23.5 standard for seamless copper tubes for refrigeration field service.
- B. Fittings shall be wrought copper.
- C. Joints shall be brazed.
- D. Valves, filter-driers and other accessories shall be suitable for refrigerant service.

2.02 INSULATION

- A. Refrigerant suction piping shall be insulated with 3/4" thick flexible elastomeric tubing insulation, AP Armaflex Pipe Insulation manufactured by Armacel or equal. Where possible, insulation shall be slid over piping from one end before pipe ends are joined and shall not be slit or cut. All joints and seams shall be sealed weather-tight.
- B. Finish coat for flexible elastomeric insulation installed outdoors shall be water-based latex enamel designed for use over all forms of flexible elastomeric insulation. Finish coat shall provide a protective finish suitable to both indoor and outdoor applications, formulated for cold weather flexibility to resist cracking and weather-resistant to ultraviolet (UV) and ozone. Coating shall be Armaflex WB Finish or equivalent.

PART 3 - EXECUTION

3.01 GENERAL

- A. Refrigerant piping shall be supported as shown on the Drawings and as required at intervals not over 8'-0" O.C. and at all turns and offsets. Hangers shall be copper plated

tubing hangers of adequate size to fit around tubing and insulation as required. Saddles shall be used under insulated tubing to protect insulation.

- B. Refrigerant piping shall be clean and free of outside contaminants at all times. Prior to start-up of any equipment or insulation installation, all piping shall be cleaned, tested, dehydrated and charged as recommended by the refrigerant compressor manufacturer.
 - 1. Procedure: Joints and connections in refrigerant piping shall not be installed in partitions or walls or where inaccessible for testing, inspection and rework. Make provisions to prevent contact of dissimilar metals. During construction, cap all tubing to prevent moisture from entering. Keep in dry location.
 - 2. Leak testing and recharging: Upon completion of installation of air conditioning equipment, test all refrigerant piping, components and accessories, including quick-connect refrigerant connectors for evaporator and condensing unit; test with a halide torch; prove tight by Contractor to assure a leak-tight refrigerant system. If leaks are detected at the time of installation or during warranty period, remove entire refrigerant charge from system, correct leaks, and retest system. After system is found to be leak free, evacuation shall be accomplished by use of a reliable gauge and a vacuum pump capable of pulling vacuum of at least one mm Hg absolute. Accomplish system evacuation in strict accordance with equipment manufacturer's printed instruction. System leak testing, evacuation, dehydration and charging with refrigerant shall comply with requirements contained in ARI Standard 260.
- C. All joints in refrigerant piping shall be made accessible. Joints shall not be permitted below concrete.
- D. All piping shall be run true to grade and shall be arranged to make the best possible appearance. Except where otherwise required by conditions of installation, all piping shall be symmetrical and parallel with lines of buildings or structure in which it is installed. All piping shall be run concealed except in mechanical room and where indicated otherwise.
- E. All piping and equipment shall be supported and guided. Anchors shall be provided to absorb or transmit thrust and eliminate vibration or pulsation. Hangers or supports shall be provided near each change of direction. Supports shall be so located or shall be of such type as not to unduly restrict the movement of the pipe due to lateral or longitudinal expansion.

END OF SECTION

SECTION 15135

SINGLE PACKAGE ROOFTOP AIR CONDITIONERS (VARIABLE AIR VOLUME)

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Furnish and install factory assembled, piped and wired single package rooftop air conditioners of the type, operational characteristics and capacity as shown and scheduled and as specified herein. All rooftop units shall be by the same manufacturer. The manufacturer shall have available factory trained service engineers and an inventory of replacement parts within a 100-mile radius of the job site.
 - 1. Acceptable manufacturers are JCI, Carrier, Trane and Lennox.
 - 2. Compressor shall be warranted against parts failure for five (5) years.
 - 3. Submit catalog cuts, certified performance data, and dimensional data.

PART 2 - PRODUCTS

2.01 EQUIPMENT AND MATERIALS

- A. Unit shall be designed specifically for outdoor installation with all exterior surfaces of phosphatized, zinc-coated steel with primer and baked enamel finish. All components, including accessories shall be contained within the unit.
- B. Access to internal components shall be afforded by removable gasketed access panels with quick release latches and lifting handles.
- C. Unit shall have factory installed lifting lugs capable of accepting standard lifting slings and spreader bars to facilitate hoisting.
- D. Electrical power connections shall be to a single point.
- E. Unit shall be insulated with a minimum of 1", 1-pound density glass fiber insulation mat-faced.
- F. Unit shall be designed for curb mounting and mate with a full perimeter roof curb for a complete weather tight seal. Curb shall be a minimum of 12" high and manufactured of 12-gauge zinc-coated steel and be supplied by the unit manufacturer with wood nailed strip and gasketing. Unit sides shall overhang the curb to form protective drip lip. Supply and return ducts shall connect to the curb prior to placement of the unit. The manufacturer shall furnish gasketing materials for a leak-tight seal between the unit and cut connections.
- G. Stainless steel double-sloped drain pan under the entire width of the coil.

2.02 HEATING SECTION

- A. Provide open wire electric heating coil with thermal high limit cut-outs and over current protection. Units with electric heat shall have single power connection.

2.03 COMPRESSOR

- A. Semi-hermetic reciprocating compressor shall be provided with capacity reduction of a minimum of 50% on units 15 tons and larger. Units smaller than 15 tons shall have hermetic compressors.
- B. A crankcase heater shall be provided and wired to be active continuously.
- C. The compressor shall be provided with spring isolators and flexible discharge line and hot gas muffler.
- D. Motor shall be specifically designed for operation within a refrigerant atmosphere. Inlet screens shall be provided. Motor shall be capable of starting and continuously operating at ambients as high as 120 degrees F. Motor shall have overload protection and internal thermostats.
- E. Compressor motor shall be capable of withstanding voltage fluctuations of plus or minus 10% of name plated voltage.

2.04 REFRIGERATION CIRCUIT

- A. The unit shall be certified as complying with ARI Standard 210 and bear the ARI seal.
- B. The evaporator coil shall consist of 3/8" O.D. copper tubes mechanically bonded to aluminum plate fins and be pressure and leak tested at 425 psig. Condenser fans shall be statically and dynamically balanced. Fan motors shall be UL Listed for outdoor use, have built-in thermal overload protection and permanently lubricated bearings. Condensing section shall be designed for a maximum of 130 degrees F condensing temperature with ambient air at 95 degrees F. Coil shall be circuited for subcooling.
- C. Unit shall incorporate an insulated and sealed drain pan with threaded drain connections at each end of the unit. The Contractor shall install P-traps.
- D. Refrigeration controls shall include as a minimum, high and low pressure control, compressor winding thermostat and overload, lockout circuit re-settable at the unit thermostat, contactors for condenser/evaporator fans and compressor, and 24 volt control power transformer.
- E. Unit shall ship with an operating charge of R-410A

2.05 SUPPLY FAN SECTION

- A. The supply fan is a single Forward-curved fan Class I or II construction as required by the fan rating point, with belt-driven fixed motor sheaves, self-aligning pillow-block re-

greasable ball bearings, and 40 HPODP - Premium Efficiency motor. Fan and motor are assembled on a fan skid with 1" Spring Isolation and will be dynamically balanced in the factory prior to shipment.

- B. Variable-air-volume control will be accomplished via a factory-installed variable-frequency-drive located in the supply fan section discharge wall. The drive will be plenum rated, and will be factory-programmed and tested prior to shipment. The drive alphanumeric keypad and display will be located in the control cabinet and wired to the drive. The keypad will be located on a hinged access panel that allows access to the single packaged unit control board.

2.06 EVAPORATOR SECTION

- A. Evaporator coils will be direct expansion type with intertwined circuiting to assure complete coil face activity during part load operation. Coil tubes will be 1/2" OD copper, with internally enhanced tubes. Fins will be enhanced Aluminum Fins mechanically expanded to bond with the copper tubes. Coil casing will be fabricated from heavy gauge galvanized steel. All coils will be pressure tested at a minimum of 450 PSIG.
- B. A stainless steel double-sloped drain pan will be provided under the entire width of the evaporator coil. The main drain pan will be sloped a total of 1/8" per foot towards the drainage point. Main drain pan will be accessible and easily cleanable in the field. The condensate drain opening will be flush with the bottom of the drain pan to allow complete drainage. Coils in excess of 48" high will have an intermediate drain pan extending the entire finned length of the coil to provide better water drainage. Drainage from the intermediate drain pan will be to the primary drain pan.

2.07 CONDENSER SECTION

- A. Propeller type, directly driven by permanently lubricated TEAO motor. Condenser fans will be matched up with compressors to optimize system control.
- B. Condenser coils are 3/8" seamless copper tubes, arranged in staggered rows, mechanically expanded into Aluminum Fins. Coils are configured in a V-bank configuration, with individual flat coils rotated from the vertical plane for protection from hail damage for each condensing circuit. Condensing coils will have an integral subcooler for more efficient, stable operation. Condenser coil guards are provided on each open face of the condenser section for protection against hail and to improve the appearance of the unit.
- C. Units will use industrial-duty hermetic scroll compressors, piped and charged with oil and HFC-410a refrigerant. Compressors include a solid state protection module, designed to protect the compressor from over-temperature and over-current conditions. Each compressor will include the following safety and convenience devices: discharge line check valve and oil sight glass. Compressors will be vibration-isolated from the unit, and installed in an easily accessible area of the unit. All compressor-to-pipe connections will be brazed.

- D. Refrigerant piping includes check valves, thermal expansion valves with replaceable thermostatic elements, Standard Drier, high and low pressure switches, anti-recycling timing device to prevent compressor restart for five minutes after shutdown. Shut-off isolation valves are located on the suction and discharge lines of the compressor circuit for compressor servicing. Hot gas bypass piping is provided for optimal unit control at low loads.
- E. Low-ambient, head-pressure control designed to operate at temperatures as low as 0 degrees F by controlling speed of last fan of each circuit.

2.08 FILTER SECTION

- A. All filter holding frames will be of heavy duty extruded aluminum construction designed for industrial applications. All filters will be either side accessible or front loading with access doors provided on both sides of the filter section. All filter media will be 12-inch rigid filters with 65% efficiency with 2-inch pleated filters (MERV 11). Filter efficiencies will be rated in accordance with ASHRAE Standard 52-76.
- B. A differential pressure filter switch provides a signal to the OptiLogic unit controller when filter become dirty and require cleaning.

2.09 ECONOMIZER

- A. Outside Air inlet openings are covered by a factory installed rainhood permanently attached to the cabinet to prevent windblown precipitation from entering the unit. The rain hoods on the left and right sides of the unit are rotated into the cabinet and secured for shipment so that upon installation they can be rotated upwards and screwed into place. The outside air hood contains a removable and cleanable filter with an efficiency rating of 50% based on ASHRAE 52-76.
- B. All damper assemblies are low-leak design. Damper blades are fabricated from a minimum of 16 gauge galvanized steel. Blade edges are covered with vinyl seals. Damper shafts are fabricated from solid steel and mounted in the frame with bronze bearings.
- C. The outdoor air and return air dampers are interlocked and positioned by a fully modulating, solid-state damper actuator. The actuator is spring-loaded so that the outside air damper closes when power to the unit is interrupted. The operation of the economizer is fully integrated into the cooling control system. The economizer is controlled via a Dry Bulb Economizer.

2.10 RETURN/RELIEF SECTION

- A. Building air exhaust is accomplished through barometric relief dampers installed in the return air plenum. The dampers open relative to the building pressure. The opening pressure can be adjusted via a spring tension.
- B. The return air opening is located on the bottom of the unit.

2.11 ACCESSORIES TO BE PROVIDED

- A. Factory installed supply fan VFD.
- B. Low leakage dampers.
- C. Powered exhaust fan with VFD.
- D. Anti-cycling timer to provide 5-minute delay between compressor shut-down and restart.
- E. Adapter Roof curb to fit on existing curb.
- F. Dry bulb enthalpy controller economizer cycle with minimum position rheostat including dampers with modulating controllers and spring return operators. A CO₂ sensor shall also be provided in return air duct. The CO₂ sensor shall be wired back to the rooftop unit economizer such that on a CO₂ level rise the outside air damper shall go fully open until the CO₂ level returns below setpoint which shall return the outside air damper back to normal operation. The CO₂ sensor manufacturer shall be the same as the rooftop unit manufacturer.
- G. Connect new units into existing BAS system.
- H. Discharge plenum.

2.12 CONTROLS

- A. Enclosure: Unit shall be shipped complete with factory configured, installed, wired and tested single packaged unit controller housed in a rain and dust tight NEMA 3R/12 (IP55) powder painted steel cabinet with hinged, latched, and gasket sealed door.
- B. Basic Controls: Control shall include automatic start, stop, operating, protection sequences across the range of scheduled conditions and transients. The single packaged unit controller shall provide automatic control of compressor start/stop, energy saver delay and anti-recycle timers, condenser fans, and unit alarms. Automatic reset to normal operation after power failure. Software stored in non-volatile memory, with programmed setpoints retained in lithium battery backed real time clock (RTC) memory for minimum 5 years. Eighty character liquid crystal display, descriptions and numeric data in English (or Metric) units. Sealed keypad with sections for Setpoints, Display, Entry, Unit Options & clock, and an On/Off Switch.
- C. Diagnostics: Upon startup of the controller, it shall run through a self-diagnostic check to verify proper operation and sequence loading. The single packaged unit controller shall continually monitor all input and output points on the controller to maintain proper operation. The unit shall continue to operate in a trouble mode or shut down as necessary to prevent an unsafe condition for the building occupants, or to prevent damage to the equipment. In the event of a unit shutdown or alarm, the operating conditions, date and time shall be stored in the shutdown history to facilitate service and troubleshooting.

D. BAS Communications

1. BACnet MSTP (RS-485): The unit shall include BACnet communications directly from the unit controller. Equipment that is not native BACnet at the unit control board shall include any necessary interface or translator device factory-mounted and wired within the unit. A control points list, BIBBs and PICS statement shall be provided by the manufacturer to facilitate communications programming with the building automation system. Programming, establishing communications and commissioning shall be the responsibility of the installing controls contractor. Start-up assistance and support may be purchased from the manufacturer.
2. Generic Hard-Wired BAS Interface: An interface shall be provided that provides an interface to any building automation system via hardwired connections. At a minimum, the interface shall provide the following inputs and outputs:

Inputs: supply air reset, duct static pressure reset, building static pressure reset, smoke purge operating mode, ventilation override, morning warm-up and demand limiting

Outputs: fault alarms for sensors, cooling or heating failure, supply fan faults, and dirty filter faults

2.13 AIR HANDLER VARIABLE SPEED DRIVES

- A. Variable Speed Drive: the VSD microprocessor-based, high-frequency IGBT-based-PWM AC drive has control functions and software designed specifically for fan applications. The VSD uses voltage vector control to supply full-rated motor voltage at rated frequency, full motor performance without derating, high efficiency for both drive and motor, and a nearly perfect output sine wave. The diode-bridge rectifier and DC line reactor provide a high displacement power factor at all speeds and loads and minimize power line harmonics.
- B. VSD Keypad: the VSD utilizes a common user interface with four-line alphanumeric display with factory configured settings. The interface is located in the main control enclosure separate from the drive with all power and control wiring between the interface and drive completely factory installed, tested and configured. The display is a 4-line, 68-character, multilingual alphanumeric display with a large, bright, backlit liquid crystal display (LCD) to provide complete drive information at a glance. The interface can be set to display any of 25 different items, including input reference, motor current, hours run, output frequency, horsepower, kW or kWh.
- C. LED Indication: three LEDs are provided on the VSD for indication of power applied, warning and fault. Upon power up, all LEDs will briefly light as a lamp test.
 1. Alarm - Will glow red when the drive has registered a fault condition which has caused the drive to shut down.

2. Warning - Will glow yellow to indicate a situation exists that exceeds the normal drive/system parameters, and that if condition continues, a trip is imminent.
 3. On - Will glow green to indicate that the drive is connected to AC power (line voltage is present).
- D. Operating Keys: three operating keys are provided, hand/start, off/stop and reset.
1. Hand/Start - Starts the drive regardless of remote start/stop contact (assuming safety interlock is closed). The speed of the drive will be controlled manually via the keypad "+" and "-" buttons.
 2. Off/Stop - Shuts drive down regardless of other commands.
 3. Auto/Start - Drive will start and stop via the external contact closure (building automation time clock). The speed is controlled via the building automation signal (4 to 20 mA, 0 to 10 VDC, etc.).
 4. Reset - Will reset any trip level fault (not trip lock).
- E. Directional Keys: "+/-" - Used as the electronic potentiometer to manually control the speed in the Hand/Start mode. All four keys are active during operation as well as programming. They provide the ability to move the cursor around the LCD display, or sequence through display values.
- F. Programming Keys: programming keys are provided to navigate through programming functions.
1. Change Data - Used to change the data value of a parameter when programming the drive.
 2. Cancel - Used to cancel the last programming command so the change is not carried out.
 3. OK - Used to confirm that the last programming change should be saved to memory.
 4. Display Mode - Used to select the mode of display and to change from any programming mode back to the display mode.
 5. Quick Menu - Used for programming the VSD using the 12 parameters in the quick setup menu. Can switch directly between menu mode and quick menu mode.
 6. Extended Menu - Used to access all parameters for programming. It can switch directly from this mode to quick menu.
- G. Drive Features: the VSD includes a DC line reactor, power line protection, sleep mode, run permissive circuit, four sets of acceleration/deceleration rates, three analog inputs, two analog outputs, adjustable carrier frequencies, automatic motor adaptation, lockout capability for up to four critical frequencies, automatic energy optimization, and broken belt setting.
1. DC Line Reactor: a DC line reactor is standard equipment on the VSD. This filter reduces the level of harmonics reflected back into the building power system without causing a voltage loss at the drives input and reducing efficiency

as an external AC line reactor would. This reactor also improves input power factor.

2. **Power Line Protection:** power line voltage surge protection is provided by means of input Metal Oxide Varistors (MOVs). This protects the diodes in the VSDs 3-phase full wave diode bridge. The DC line reactor also acts to slow input power surges.
3. **Sleep Mode:** automatically stops drive when speed drops below set "sleep" level for specified time. Automatically restarts when speed command exceeds set "wake" level. Saves energy and reduces wear on driven equipment.
4. **Run Permissive Circuit:** ability to accept a "system ready" signal assures that dampers or other auxiliary equipment are in the proper state for drive operation.
5. **Acceleration / Deceleration Rates:** the VSD can provide four individually controlled sets of acceleration/deceleration rates each from 0.1 to 3600 seconds. The shape of these curves may be automatically contoured to prevent tripping.
6. **Plenum Rated:** the VSD NEMA 1 or NEMA 12 is recognized by UL for installation inside any air conditioning duct or plenum.
7. **Analog Inputs:** the VSD has three analog inputs as standard (2) 0 to 10 VDC, (1) 0 to 20 mA). A built-in two speed set point PID controller allows the drive to perform the functions of a set point controller.
8. **Analog Outputs:** two outputs are supplied which are capable of providing 0 to 20 mA or 4 to 20 mA analog outputs, 0 to 32000 pulses or 0 to 10 V (requires pull-down resistor). The outputs can be proportional to drive ready, standby, running, alarm, current limit, safety interlock, start signal applied, running in reverse, thermal warning, drive in hand mode, drive in auto mode, sleep mode, output frequency, current range, feedback range, reference range, phase loss, external reference, or broken belt.
9. **Auto Restarts:** the VSD can be automatically restarted up to 20 times at 0 to 600 second intervals. If the application causes the drive to trip more than the number of trials set, the drive will stop operating and display the fault on the display screen. A manual reset will be required by means of the reset key, a digital input, or RS-485 command. In cases of severe trips, as a safety feature, the drive's input power may have to be cycled to restart a fault.
10. **Carrier Frequency:** by using IGBTs, the VSD drive can employ high switching frequencies, so the motor current is practically sinusoidal. Audible motor noise can also be minimized by adjusting the frequency. These frequencies can be set or adjust themselves on the fly to fit the application.
11. **Input Power:** the VSD is equipped with an automatic sustained power or phase loss circuit. The VSD will provide a full rated output with an input voltage as low as 90% of the nominal. The drive will continue to operate with reduced output with an input voltage as low as 164 volts for 208/230 volt units, 2313 volts for 460 volt units, and 450 volts for 575 volt units.
12. **Automatic Motor Adaptation (AMA):** knowing motor stator resistance, the drive automatically optimizes performance and efficiency. The motor does not have to be run or decoupled from the load for the AMA setup to be performed.
13. **Critical Frequency Lockouts:** for applications where it may be necessary to avoid specific frequencies due to mechanical resonance problems in the driven equipment, the VSD, with its Critical Frequency Lockout Function, makes it possible to set up to four different frequency ranges which will be avoided during operation of the drive. Each critical frequency setting can be up to +/-

50% of the center frequency speed. If the reference signal defines that the VSD is to operate within this critical frequency range, the critical frequency lockout function will keep the drive operating below the critical frequency limit. When the frequency reference signal rises above the critical frequency maximum limit, the VSD will allow the motor to accelerate through the critical frequency at the time set by the acceleration rate.

14. Automatic Energy Optimization Circuitry: the Automatic Energy Optimization (AEO) function adapts the output of the drive to the specific motor and load connected. This circuit optimizes the system efficiency as system loads change. The AEO function regulates the output voltage on the basis of the blind current and the effective current. A savings of 3 to 10% in power consumption can be obtained with this circuit.
15. Preset Speeds: the VSD allows for a maximum of sixteen programmable preset speeds to be selected from the digital inputs.
16. Broken Belt, Loss of load: a minimum motor current value can be set to indicate the motor is not using any more current than to run at idle. This can be used to indicate a broken belt or coupler. This feature can also be used to detect when a motor is disconnected from the drive.

PART 3 - EXECUTION

3.01 EQUIPMENT

- A. Unit shall be run tested at factory before shipping.

3.02 INSTALLATION

- A. Unit shall be installed level within manufacturer's recommendations.
- B. The Contractor shall install a second set of filters at job completion.

3.03 STARTUP SERVICES

- A. Manufacturer's Supervision: A factory-trained service representative of the manufacturer will supervise the unit startup and application specific calibration of control components.
 1. The single packaged unit will not be operated for any purpose, temporary or permanent, until ductwork is clean, filters are in place, bearings are lubricated, and fan has been test run under observation.
 2. After the single packaged unit is installed, the variable speed drive (if supplied) will be field commissioned by a factory trained and employed service technician.

END OF SECTION

SECTION 15135

SINGLE PACKAGE ROOFTOP AIR CONDITIONERS (CONSTANT VOLUME)

PART 1 - GENERAL

1.02 DESCRIPTION

- A. Furnish and install factory assembled, piped and wired single package rooftop air conditioners of the type, operational characteristics and capacity as shown and scheduled and as specified herein. All rooftop units shall be by the same manufacturer. The manufacturer shall have available factory trained service engineers and an inventory of replacement parts within a 100-mile radius of the job site.
 - 1. Acceptable manufacturers are JCI, Carrier, Trane and Lennox.
 - 2. Compressor shall be warranted against parts failure for five (5) years.
 - 3. Submit catalog cuts, certified performance data, and dimensional data.

PART 2 - PRODUCTS

2.14 EQUIPMENT AND MATERIALS

- A. Unit shall be designed specifically for outdoor installation with all exterior surfaces of phosphatized, zinc-coated steel with primer and baked enamel finish. All components, including accessories shall be contained within the unit.
- B. Access to internal components shall be afforded by removable gasketed access panels with quick release latches and lifting handles.
- C. Unit shall have factory installed lifting lugs capable of accepting standard lifting slings and spreader bars to facilitate hoisting.
- D. Electrical power connections shall be to a single point.
- E. Unit shall be insulated with a minimum of 1", 1-pound density glass fiber insulation mat-faced.
- F. Unit shall be designed for curb mounting and mate with a full perimeter roof curb for a complete weather tight seal. Curb shall be a minimum of 12" high and manufactured of 12-gauge zinc-coated steel and be supplied by the unit manufacturer with wood nailed strip and gasketing. Unit sides shall overhang the curb to form protective drip lip. Supply and return ducts shall connect to the curb prior to placement of the unit. The manufacturer shall furnish gasketing materials for a leak-tight seal between the unit and cut connections.
- G. Stainless steel double-sloped drain pan under the entire width of the coil.

2.15 HEATING SECTION

- A. Provide open wire electric heating coil with thermal high limit cut-outs and over current protection. Units with electric heat shall have single power connection.

2.16 COMPRESSOR

- A. Semi-hermetic reciprocating compressor shall be provided with capacity reduction of a minimum of 50% on units 15 tons and larger. Units smaller than 15 tons shall have hermetic compressors.
- B. A crankcase heater shall be provided and wired to be active continuously.
- C. The compressor shall be provided with spring isolators and flexible discharge line and hot gas muffler.
- D. Motor shall be specifically designed for operation within a refrigerant atmosphere. Inlet screens shall be provided. Motor shall be capable of starting and continuously operating at ambients as high as 120 degrees F. Motor shall have overload protection and internal thermostats.
- E. Compressor motor shall be capable of withstanding voltage fluctuations of plus or minus 10% of name plated voltage.

2.17 REFRIGERATION CIRCUIT

- A. The unit shall be certified as complying with ARI Standard 210 and bear the ARI seal.
- B. The evaporator coil shall consist of 3/8" O.D. copper tubes mechanically bonded to aluminum plate fins and be pressure and leak tested at 425 psig. Condenser fans shall be statically and dynamically balanced. Fan motors shall be UL Listed for outdoor use, have built-in thermal overload protection and permanently lubricated bearings. Condensing section shall be designed for a maximum of 130 degrees F condensing temperature with ambient air at 95 degrees F. Coil shall be circuited for subcooling.
- C. Unit shall incorporate an insulated and sealed drain pan with threaded drain connections at each end of the unit. The Contractor shall install P-traps.
- D. Refrigeration controls shall include as a minimum, high and low pressure control, compressor winding thermostat and overload, lockout circuit re-settable at the unit thermostat, contactors for condenser/evaporator fans and compressor, and 24 volt control power transformer.
- E. Unit shall ship with an operating charge of R-410A.

2.18 EVAPORATOR FANS

- A. Evaporator fan shall be direct driven or belt driven forward curved type with an adjustable sheave and motor sized to meet the air flow and static pressure as scheduled on the Drawings.

- B. Fans assembly shall be isolated from the unit on RIS isolators.
- C. Motor shall have thermal overload protection and motor and fan bearings shall be permanently lubricated.
- D. Fan wheel shall be protected from corrosion with a painted finish.

2.19 ACCESSORIES TO BE PROVIDED

- A. Low leakage dampers.
- B. Anti-cycling timer to provide 5-minute delay between compressor shut-down and restart.
- C. Adapter Roof curb to fit on existing curb.
- D. Dry bulb enthalpy controller economizer cycle with minimum position rheostat including dampers with modulating controllers and spring return operators. A CO₂ sensor shall also be provided in return air duct. The CO₂ sensor shall be wired back to the rooftop unit economizer such that on a CO₂ level rise the outside air damper shall go fully open until the CO₂ level returns below setpoint which shall return the outside air damper back to normal operation. The CO₂ sensor manufacturer shall be the same as the rooftop unit manufacturer.
- E. Connect new units into existing BAS system.

PART 3 - EXECUTION

3.04 EQUIPMENT

- A. Unit shall be run tested at factory before shipping.

3.05 INSTALLATION

- A. Unit shall be installed level within manufacturer's recommendations.
- B. The Contractor shall install a second set of filters at job completion.

END OF SECTION

SECTION 15170

HVAC INSULATION

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. All work specified herein shall be accomplished in accordance with the applicable requirements of Section 15000 - HVAC General.

1.02 WORK INCLUDED

- B. The work done under this section shall include all labor, materials, accessories, services and equipment necessary to furnish and install all insulation, complete, as indicated on the Drawings and as specified herein.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Materials as specified in this section shall be manufactured by Armstrong, Johns-Manville, Knauf, Pittsburgh-Corning, Certainteed, Pabco, Dow Chemical, Owens Corning or approved equal.
- B. Insulation thicknesses shall be as shown in the following table:

Minimum Pipe Insulation			Insulation Thickness for Pipe Sizes					
Piping System Types	Fluid Temperature Range		Runouts 2 in. +	1 in. and Less	1-1/4 to 2 in.	2-1/2 to 4 in.	5 and 6 in.	8 in. and Larger
	°C	°F	In.	In.	In.	In.	In.	In.
(Cooling Systems)								
Refrigerant or Brine	Below 4.5	Below 40	1.0	1.0	1.5	1.5	1.5	1.5
+ Runouts to Individual Terminal Units (not exceeding 12 ft. in length)								
* For chilled water piping located in attics and other unconditioned spaces (excluding return air plenums), increase the pipe insulation thickness by 1/2" for pipe sizes up through 8". Insulation for piping 10" and larger shall be 2-1/2" thick.								

- C. Unless noted otherwise, the abovementioned piping systems inside the building shall be insulated with a 5 lb/cu. ft. (nominal) density sectional fiberglass insulation with a thermal conductivity (k factor) not to exceed 0.24. The jacket shall be fire retardant with a suitable vapor barrier. All joints and seams shall be sealed vapor tight. All joints and seams shall be lapped in place to form a continuous vapor barrier covering. All seams shall then be covered with "All Service Jacket" (ASJ) 3" wide tape. The tape shall match the jacket. The tape shall be squeegeed in place to provide complete adhesion of the tape to the jacket and to provide a continuous vapor barrier covering. Exterior water piping shall be heat traced (Refer to Section 15052 - Piping and Accessories).

- D. Piping installed outdoors shall be insulated with cellular glass insulation, Pittsburgh-Corning "Foamglas" or approved equal. Insulation thickness required to prevent condensation shall be determined by the manufacturer for worse case ambient conditions.
 - 1. Install with all service jacket and in accordance with manufacturer's recommendations.
 - 2. Where heat tracing is specified, oversize insulation to allow space for heat tape.
- E. Equipment shall be insulated in the same manner as specified for the associated piping. Suitable provisions shall be made for breaking flanges as may be required for maintenance. Hot water pumps do not get insulated unless specifically called for. The following equipment, but not limited to, requires insulation: expansion tanks, air separators, chemical treatment "shot type" feeders, storage tanks, etc.
- F. Provide high density preformed pipe insulation inserts at all pipe hangers. Inserts shall be equal to Foamglas by Pittsburgh Corning or calcium silicate. Provide ribbed hanger saddles by Centerline, Buckaroos, Inc. or approved equal.
- G. Piping and/or breeching exposed to the weather and designated to be insulated shall be insulated in the same way it is insulated within the building for concealed areas. It shall then be weatherproofed with corrugated aluminum jacketing. It shall have 3/16" corrugations and shall be 0.016" thick with a factory attached moisture barrier continuously laminated across the full width of the jacketing. All pipe fittings, valves and specialties exposed to the weather shall be insulated and weatherproofed with aluminum jacketing. Childers Universe-E11 Jacs of the same metal as the jacketing shall be used. Jacketing shall have a 2" lap at all joints. Longitudinal laps shall be on the underneath side of horizontal runs and slightly offset from one another. The outside of the longitudinal lap shall also have a 1" hem turned under. All laps shall be made with weatherproof mastic. Wrap the jacketing tightly and smoothly and secure with aluminum or stainless steel bands. Bands shall not be more than 12" on center and a strap shall be placed at the circumferential laps. The lap shall have adequate mastic to make a tight joint. Excess mastic shall be removed from the outside to provide a neat and professional appearance.
- H. Provide insulating tape over all piping specialties to prevent condensation such as drain valves, drain plugs, combination temperature/pressure test plugs, etc.
- I. All insulation must meet applicable codes for Flame Spread and Smoke developed ratings.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Shop drawing submittals shall include a complete package of materials and methods intended for use as described in this section.

- B. All work shall be in strict accordance with applicable codes, ordinances and the manufacturer's recommendations.
- C. All work shall be performed in a professional workmanlike manner and standard trade practice. It shall be smooth in appearance and suitable for finish painting.
- D. All exterior piping shall be installed with a corrugated aluminum jacket with bands 3'-0" on center.
- E. Fiberglass pipe insulation shall be applied to clean (free of rust) dry pipe prior to leak testing. Chilled and condenser water systems shall not be operated until the insulation is completely installed with a vapor barrier in place.

END OF SECTION

SECTION 15950

TESTING, ADJUSTING AND BALANCING (TAB)

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Refer to specification section 15000 - HVAC General, all of which applies to work described in this section as if written in full herein.
- B. The work described by this section of the specifications consists of furnishing all materials, instruments, labor, and appurtenances to test, adjust and balance all of the HVAC systems furnished and installed under Division 15 of the specifications.
- C. The TAB agency shall be a subcontractor of the General Contractor and shall not report to or be paid by the HVAC Contractor. The HVAC subcontractor shall be responsible to cooperate with and provide for the balancing subcontractor any and all materials, services, labor, etc. to facilitate completion of the balancing work.

1.02 QUALITY ASSURANCE

- A. The TAB agency and its specialist shall be certified members of Associated Air Balance Council (AABC) or certified by the National Environmental Balance Bureau (NEBB) to perform TAB service for HVAC, and vibration and sound testing of equipment. The certification shall be maintained for the entire duration of duties specified herein. The TAB agency shall have been in business for at least the past five years and must be free of disciplinary action by either the AABC or the NEBB during that time.
- B. All TAB technicians performing actual TAB work shall be experienced and must have done satisfactory work on a minimum of 3 projects comparable in size and complexity of this project and must be certified so by the TAB agency in writing.
- C. The basic instrumentation shall be calibrated to accuracy requirements by its manufacturer, AABC or NEBB Procedural Standards for Testing, Adjusting and Balancing of Environmental Systems. Provide calibration history of the instruments to be used for test and balance purpose.
- D. One or more of the applicable AABC, NEBB or SMACNA publications, supplemented by the ASHRAE Handbooks and requirements stated herein shall be the basis for planning, procedures, tolerances and reports. Final report shall cite the exact names of publications used as a basis or reference for the TAB work or reports.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Provide plastic plugs to seal holes drilled in ductwork for test purposes.

- B. Provide for repair of insulation removed or damaged for TAB work to match installation.

PART 3 - EXECUTION

3.01 TAB PROCEDURES

- A. TAB shall be performed in accordance with the requirements of the Standard under which the TAB agency is certified, either AABC or NEBB.
- B. During TAB all related system components shall be in full operation. Fan and pump rotation, motor loads and equipment vibration shall be checked and corrected as necessary before proceeding with TAB. Set controls and/or block off parts of distribution systems to simulate design operation of variable volume air or water systems for test and balance work.
- C. Adjustment of the temperature controls shall be coordinated by the TAB work specialist in conjunction with the Automatic Temperature Control Company's Engineer. Both shall cooperate to simulate a complete cycle for every system in every mode of operation (automatic, economizer, fire emergency, etc.).
- D. Coordinate TAB procedures with any phased construction completion requirements for the project. Provide TAB reports for each phase of the project prior to partial final inspections of each phase of the project.

3.02 AIR SYSTEMS TAB

- A. Systems shall be tested, adjusted and balanced so that air quantities and temperatures at outlets are as shown on the Contract Drawings and so that the distribution from supply outlets is uniform over the face of each outlet.
- B. Direct reading velocity meters may be used for comparative adjustment of individual outlets, but air quantities in ducts having velocities of 1,000 feet per minute or greater shall be measured by means of pitot tubes and inclined gauge manometers. Instrument test opening enclosures shall be provided as required at the direction of the TAB agency.

- C. Adjustments shall be made in such a manner that splitter and volume adjusters close to air outlets will have the least pressure drop consistent with volume requirements. Primary balancing shall be obtained by adjustment of the dampers at branch duct take-offs. Adjustable fan drives shall be used for making final adjustments of total air quantities. Additional dampers or other air volume adjusters required to accomplish the balancing and adjusting shall be furnished and installed as part of the HVAC work.
- D. Artificially load air filters by partial blanking to produce air pressure drop of at least 90 percent of the design final pressure drop.
- E. Check and readjust factory set minimum and maximum air terminal unit flow rates if necessary. Balance air distribution on full cooling maximum. Reset room thermostats and check operation from maximum to minimum cooling, to the heating mode, and back to cooling. Record and report the heating coil leaving air temperature when in the maximum heating mode.
- F. Adjust fan speeds to provide design air flow. Adjust V-belt drives, including fixed pitch pulley requirements.
- G. After completion of the testing, adjusting and balancing of the air systems, six (6) copies of a recognized complete set of reports showing the minimum following information shall be submitted to the Engineer for review:
 - 1. Systems inspection narrative on equipment and installation for conformance with design
 - 2. Duct Air Leakage Test Report
 - 3. Systems Readiness Report
 - 4. TAB report covering flow balance and adjustments, performance tests, vibration tests and sound tests. Required information:
 - a. Location of each air outlet or inlet. This shall be presented in the form of a reduced size floor plan showing outlet number keyed to the outlet number in the report.
 - b. Dimensions or size of each outlet or inlet
 - c. Type and manufacturer of diffusers, grilles, registers. Indicate duty as supply, return, exhaust, etc.
 - d. Cfm of air as indicated on the Drawings for each outlet or inlet with corresponding velocity
 - e. Velocity of air as measured and corresponding cfm at which system has been balanced and adjusted, for each outlet or inlet
 - f. Velocity of air measured and corresponding cfm, after each complete system has been balanced and adjusted, for each main branch or zone duct at the supply fan, the return fan and the exhaust fan, as the case may be
 - g. After each complete system has been balanced and adjusted, the total cfm at fan discharge, the total return air to the apparatus, the total outside air to the apparatus, static pressure at fan outlet, total static pressure for apparatus, fan speed, motor amperage for each phase and voltage
 - 5. Narrative of uncorrected installation deficiencies noted during TAB and

applicable explanatory comments on test results that differ from design requirements

- H. The above testing, adjusting and balancing shall be performed for the first season of the year, cooling season or heating season, which occurs at the completion of the building. Additional balancing and adjusting which may be required for the season of the year next following shall be performed as part of the work under this specification.

3.03 VIBRATION TESTING

- A. Furnish instruments and perform vibration measurements for all rotating HVAC equipment of 1/2 horsepower and larger, including centrifugal/screw compressors, cooling towers, pumps, fans and motors.
- B. Record initial measurements for each unit of equipment on test forms and submit a report to General Contractor. Where vibration readings exceed the allowable tolerance, the HVAC Contractor shall correct the problem and the TAB agency shall verify the corrections are done for final reporting.

3.04 SOUND TESTING

- A. Perform and record required sound level measurements in approximately 15% of all rooms as designated by the General Contractor.
- B. Take measurements with a calibrated sound level meter and octave band analyzer of the accuracy required by AABC or NEBB.
- C. Where measure sound levels exceed specified levels, the installing contractor or equipment manufacturer shall take remedial action approved by the General Contractor and the necessary sound tests shall be repeated.

3.05 MARKING OF SETTINGS AND TEST PORTS

- A. Following the approval of the final TAB Report, the setting of all HVAC adjustment devices including valves, splitters and dampers shall be permanently marked by the TAB Specialist so that adjustment can be restored if disturbed at any time. Style and colors used for markings shall be coordinated with the General Contractor.
- B. The TAB Specialist shall permanently and legibly identify the location points of duct test ports. If the ductwork has exterior insulation, the identification shall be made on the exterior side of the insulation. All penetrations through ductwork and ductwork insulation shall be sealed to prevent air leaks and maintain integrity of vapor barrier.

END OF SECTION

Cobb County General Instructions For Bidders, Terms and Conditions

I. Preparation Of Bids

Each bidder shall examine the drawings, specifications, schedule and all instructions. Failure to do so will be at the bidder's risk, as the bidder will be held accountable for their bid response.

Unit price for each quotation shall be shown and such price shall include packing unless otherwise specified, along with a total and grand total where applicable. In case of discrepancy between a unit price and extended price, the unit price will be presumed correct.

Each bidder shall furnish all information required by the bid form or document. Each bidder shall sign the bid and print or type his or her name on the schedule. The person signing the bid must initial erasures or other changes. An authorized agent of the company must sign bids.

Invitations to Bid issued by Cobb County are advertised on the Cobb County Internet site (www.purchasing.cobbcounty.ga.gov) and every Friday in the Cobb County legal organ, the Marietta Daily Journal.

II. Delivery

Each bidder should state the time of proposed delivery of goods or services. Words such as "immediate", "as soon as possible", etc. shall not be used. The known earliest date or the minimum number of calendar days required after receipt of order (delivery A.R.O.) shall be stated (if calendar days are used, include Saturday, Sunday and holidays in the number).

III. Explanation to Bidders

Any explanation desired by a bidder regarding the meaning or interpretation of the invitation for bids, drawings, specifications, etc. must be received in writing **by 5:00 pm, April 3, 2012** in order for a reply to reach all bidders before the close of the bid. Any information concerning an Invitation to Bid (ITB) will be furnished to all prospective bidders as an addendum if such information is necessary or if the lack of such information would be prejudicial to uninformed bidders.

Submit questions in writing to:
Cobb County Purchasing Department
1772 County Services Parkway
Marietta, GA 30008
Fax: 770-528-1154
Email: purchasing@cobbcounty.org

The written bid documents supersede any verbal or written communication between parties. Addenda are posted on the Purchasing web site: www.purchasing.cobbcounty.ga.gov. Receipt of addenda should be acknowledged in the bid. It is the bidder's ultimate responsibility to ensure that they have all applicable addenda prior to bid submittal.

IV. Submission of Bids

Bids shall be enclosed in sealed envelopes, addressed to the Cobb County Purchasing Department with the name of the bidder, the date and hour of opening and the invitation to bid number on the face of the envelope. Bids must be received in the Purchasing Department no later than the date and time (determined by the date/time stamp in the department) set forth in the Invitation to Bid. It is the sole responsibility of the bidder to ensure that his or her bid reaches the Purchasing Department. Telegraphic/faxed bids will not be considered. Any addenda should be enclosed in the sealed envelopes as well. **All bids shall be submitted on the Bid Proposal Form. Any revisions made on the outside of the envelope will not be accepted.** The bids will be publicly opened and read at the time and place set forth in the Invitation to Bid.

Samples of items, when required, must be submitted within the time specified and, unless otherwise specified by the County, at no expense to the County. Unless otherwise specified, samples will be returned at the bidder's request and expense if items are not destroyed by testing. Items offered must meet required specifications and must be of a quality, which will adequately serve the use and purpose for which intended.

Full identification of each item bid upon, including brand name, model, catalog number, etc. must be furnished to identify exactly what the bidder is offering. The bidder must certify that items to be furnished are new and that the quality has not deteriorated so as to impair its usefulness.

If no items are bid on, the "Statement of No Bid" must be returned, with the envelope plainly marked "No Bid" including the bid number. Where more than one item is listed, any items not bid upon must be indicated "No Bid".

Unsigned bids will not be considered except in cases where bid is enclosed with other documents, which have been signed. The County will determine this.

Cobb County is exempt from federal excise tax and Georgia sales tax with regards to goods and services purchased directly by Cobb County. Suppliers and contractors are responsible for federal excise tax and sales tax, including any taxes for materials incorporated in county construction projects. Suppliers and contractors should contact the State of Georgia Sales Tax Division for additional information. Tax Exemption Certificates will be furnished upon request.

Information submitted by a bidder in the bidding process shall be subject to disclosure after the public opening in accordance with the Georgia Open Records Act. Each page of proprietary information must be identified. Entire bid may not be deemed proprietary.

V. Withdraw Bid Due To Errors

The bidder shall give notice in writing of his claim of right to withdraw his bid without penalty due to an error within two (2) business days (48 hours) after the conclusion of the bid opening. Bids may be withdrawn from consideration if the price was substantially lower than the other bids due solely to a mistake therein, provided the bid was submitted in good faith, and the

mistake was a clerical mistake as opposed to a judgment mistake, and was actually due to an unintentional arithmetic error or an unintentional omission of a quantity of work, labor or material made directly in the compilation of the bid, which unintentional arithmetic or unintentional omission can be clearly shown by objective evidence drawn from inspection of original work papers, documents and materials used in the preparation of the bid sought to be withdrawn. The bidder's original work papers shall be the sole acceptable evidence of error and mistake if he elects to withdraw his bid. If a bid is withdrawn under the authority of this provision, the lowest remaining responsive bid shall be deemed to be low bid. Bid withdrawal is not automatically granted and will be allowed solely at the discretion of Cobb County.

No bidder who is permitted to withdraw a bid shall, for compensation, supply any material or labor or perform any subcontract or other work agreement for the person or firm to whom the contract is awarded or otherwise benefit, directly or indirectly, from the performance of the project for which the withdrawn bid was submitted.

Supplier has up to forty-eight (48) hours to notify the Cobb County Purchasing Department of an obvious clerical error made in calculation of bid in order to withdraw a bid after bid opening. Withdrawal of bid for this reason must be done in writing within the forty-eight (48) hour period. Suppliers who fail to request the withdrawal of bid by the required forty-eight (48) hours shall automatically forfeit bid bond. Bid may not be withdrawn otherwise. Bid withdrawal is not automatically granted and will be allowed solely at the discretion of Cobb County.

VI. Testing and Inspection

Since tests may require several days for completion, the County reserves the right to use a portion of any supplies before the results of tests are determined. Cost of inspections and tests of any item, which fails to meet specifications, shall be borne by the bidder.

VII. F.O.B. Point

Unless otherwise stated in the Invitation to Bid and any resulting contract, or unless qualified by the bidder, items shall be shipped F.O.B. Destination. The seller shall retain title for the risk of transportation, including the filing for loss or damages. The invoice covering the items is not payable until items are delivered and the contract of carriage has been completed. Unless the F.O.B. clause states otherwise, the seller assumes transportation and related charges either by payment or allowance.

VIII. Patent Indemnity

The contractor guarantees to hold the County, its agents, officers, or employees harmless from liability of any nature or kind for use of any copyrighted or uncopyrighted composition, secret process, patented or unpatented invention, articles or appliances furnished or used in the performance of contract, for which the contractor is not the patentee, assignee or licensee.

IX. Bid, Pay, & Performance Bonds

A five percent (5%) bid bond, one hundred percent (100%) performance bond, and a one hundred percent (100%) payment bond shall be furnished to Cobb County for any bid as

required in bid package or document. Failure to submit appropriate bonding will result in automatic rejection of bid. Bonding company must be authorized to do business in Georgia by the Georgia Insurance Commission, listed in the Department of the Treasury's publication of companies holding certificates of authority as acceptable surety on Federal bonds and as acceptable reinsuring companies, and have an A.M. Best rating as stated in the insurance requirements of the solicitation. The bonds shall be increased as the contract amount is increased.

XI. Insurance

Insurance requirements: Contractor shall procure and maintain for the duration of the contract, insurance against claims for injuries to persons or damages to property that may arise from or in connection with performance of the Work hereunder by the Contractor, his agents, representatives, employees, or subcontractors.

A. MINIMUM LIMITS OF INSURANCE

Contractor shall maintain limits no less than:

1. General Liability: \$1,000,000 combined single limit per occurrence for comprehensive coverage including bodily injury, personal injury and property damage for premises/operations, products/completed operations, contractual liability, independent contractors, broad-from property damage, and underground, explosion and collapse hazard.
2. Automobile Liability: \$1,000,000 combined single limit per accident for bodily injury and property damage including all owned, hired, and non-owned.
3. Workers' Compensation and Employers Liability: Workers' Compensation limits as required by the Labor code of the State of Georgia and Employers Liability of \$100,000 per accident.
4. Umbrella Liability: \$5,000,000 combined single limits per occurrence.
5. Builders Risk Insurance, if applicable: All Risk coverage on any buildings, structure of work and material in an amount equal to 100 per cent of the value of the contract. Coverage is to cover Cobb County interest and Cobb County shall be named as Loss Payee.

B. DEDUCTIBLES AND SELF-INSURED RETENTION

Any deductibles or self-insurance retentions must be declared to and approved by the Owner. At the option of the Owner, either: The insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the Owner, its officers officials, and employees; or the Contractor shall procure a bond guaranteeing payment of losses related to investigations, claim administration and defense expenses.

C. OTHER INSURANCE PROVISIONS

1. General Liability, Automobile Liability, and Umbrella Liability Coverages.
The Owner and its officers, officials, employees and volunteers are to be covered as additional insureds as respects: liability arising out of activities performed by or on behalf of the Contractor.

Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the Owner and its officers, officials, employees and volunteers.

The Contractor is responsible for insuring its own property and equipment.

2. Workers' Compensation and Employers Liability Coverage. The insurer shall agree to waive all rights of subrogation against the Owner and its officers, officials, employees and volunteers for losses arising from the work performed by the Contractor for the Owner.

3. All Coverages: Each insurance policy required by this clause shall be endorsed to state that coverage shall not be changed, cancelled, suspended, terminated or non-renewed except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to Cobb County of said change of coverage, cancellation, suspension, termination / or non-renewal.

D. ACCEPTABILITY.

Insurance is to be placed with insurers with a Best's rating of no less than A: VII, or otherwise acceptable to the Owner.

E. VERIFICATION OF COVERAGE.

Contractor shall furnish the Owner with certificates of insurance and with original endorsements effecting coverage required by this clause. These certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The certificates and endorsements are to be received and approved by the Owner before any work commences. The Owner reserves the right to require complete, certified copies of all required insurance policies at any time.

F. SUBCONTRACTORS

Subcontractor means one not in the employment of the Contractor who is performing all or part of the services under this Agreement under a separate contract with the Contractor.

Contractor shall include all subcontractors as an additional insured under its insurance or shall ensure that subcontractors have met the insurance requirements of this agreement. Owner may request evidence of subcontractor's insurance.

Contractor is responsible for having all subcontractors comply with all terms and conditions of the Invitation to Bid.

G. WAIVER OF SUBROGATION

Vendor shall require all insurance policies in any way related to the work and secured and maintained by Vendor to include clauses stating each underwriter shall waive all rights of recovery, under subrogation or otherwise, against Customer. Vendor shall require of subcontractors, by appropriate written agreements, similar waivers each in favor of all parties enumerated in this section.

XII. Award

Award will be made to the lowest responsive and responsible bidder. Conditional bids are not be acceptable. The quality of articles to be supplied, their conformity with the specifications, their suitability to the requirements of the County, and the delivery terms will be taken into consideration in making the award. The County may make such investigations as it deems necessary to determine the ability of the bidder to perform, and the bidder shall furnish to the County all such information and data for this purpose as the County may request. The County reserves the right to reject any bid if the evidence submitted by, or investigation of such bidder fails to satisfy the County that such bidder is properly qualified to carry out the obligations of the contract. The County reserves the right to reject or accept any or all bids and to waive technicalities, informalities, and minor irregularities in bids received.

The County reserves the right to purchase the goods or services described herein from other sources. The Bidder does not have the exclusive right to fill all of the County's requirements for the goods or services awarded nor will the County be obligated to purchase the estimated annual quantity or any quantity contained in the bid document.

The County reserves the right to make an award as deemed in its best interest, which may include awarding a bid to a single bidder or multiple bidders; or to award the whole bid, only part of the bid, or none of the bid to single or multiple bidders, based on its sole discretion of its best interest. In case of tie bid, the award will be made as follows:

1. The bid will be awarded to the in-county vendor.
2. The bid will be awarded to the in-state vendor.
3. The bid will be awarded to the vendor with the lesser total dollar volume.

The County reserves the right to award by line item to more than one vendor. The County reserves the right to negotiate a lower price than the bid award price on any line item with the successful vendor, should the quantity required significantly exceed those on the Invitation to Bid. If the County is unable to negotiate an acceptable price, it reserves the right to rebid the item(s) involved. If after the award of the bid there is a decrease in the price of a product from the manufacturer, or a rebate, the successful bidder will pass that price decrease and/or rebate onto the County.

Time payment discounts will be considered in arriving at net prices and in award of bids. Offers of discount for payment within ten (10) days following the end of the month are preferred.

XIII. Delivery Failures

Failure of a contractor to deliver within the time specified or within reasonable time as interpreted by the Purchasing Director, or failure to make replacement of rejected articles/services when so requested, immediately or as directed by the Purchasing Director, shall constitute authority for the Purchasing Director to purchase in the open market articles/services of comparable grade to replace the articles/services rejected or not delivered. On all such purchases, the contractor shall reimburse the County within a reasonable time specified by the Purchasing Director for any expense incurred in excess of contract prices, or the County shall have the right to deduct such amount from monies owed the defaulting contractor. Alternatively, the County may penalize the contractor one percent (1%) per day for

a period of up to ten (10) days for each day that delivery or replacement is late. Should public necessity demand it, the County reserves the right to use or consume articles delivered which are substandard in quality, subject to an adjustment in price to be determined by the Purchasing Director.

XIV. County Furnished Property

No material, labor or facilities will be furnished by the County unless so provided in the invitation to bid.

XV. Reject And Withdraw Bids

Failure to observe any of the instructions or conditions in this invitation to bid may constitute grounds for rejection of bid.

XVI. Contract

Each bid is received with the understanding that the acceptance in writing by the County of the offer to furnish any or all commodities or services described therein shall constitute a contract between the bidder and the County which shall bind the bidder on his part to furnish and deliver the articles quoted at the prices stated in accordance with the conditions of said accepted bid. The County, on its part, may order from such contractor, except for cause beyond reasonable control, and to pay for, at the agreed prices, all articles specified and delivered. The County's normal payment terms are net thirty (30) days after receipt of invoice.

The Price and all unit prices shown shall be deemed to include all costs of Contractor's performance of the Work as set forth in the Bid Documents, including, but not limited to, the costs of labor, supervision, travel, services, materials, equipment, tools, scaffolds, hoisting, transportation, storage, insurance and taxes.

Upon receipt of a bid package, containing a Cobb County "Sample Contract" as part of the requirements, it is understood that the bidder has reviewed the documents with the understanding that Cobb County requires all agreements between the parties must be entered into via this document. If any exceptions are taken to any part, each must be stated in detail and submitted as part of the bid. If no exceptions are stated, it is assumed that the bidder fully agrees to the provisions contained in the "Sample Contract" in its entirety.

When the contractor has performed in accordance with the provisions of this agreement, Cobb County shall pay the contractor, within thirty (30) days of receipt of any payment request based upon work completed or service provided pursuant to the contract, the sum so requested, less the retainage stated in this agreement, if any.

XVII. Non-Collusion

By submission of a bid, the vendor certifies, under penalty of perjury, that to the best of its knowledge and belief:

- (a) The prices in the proposal have been arrived at independently without collusion, consultation, communications, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other

- vendor or with any competitor.
- (b) Unless otherwise required by law, the prices which have been quoted in the proposal have not been knowingly disclosed by the vendor prior to opening, directly or indirectly, to any other vendor or to any competitor.
- (c) No attempt has been made, or will be made, by the vendor to induce any other person, partnership or corporation to submit or not to submit a proposal for the purpose of restricting competition.

Collusions and fraud in bid preparation shall be reported to the State of Georgia Attorney General and the United States Justice Department.

XVIII. Conflict of Interest, Etc.

By submission of a bid, the responding firm certifies, under penalty of perjury, that to the best of its knowledge and belief:

1. No circumstances exist which cause a Conflict of Interest in performing the services required by this ITB, and
2. That no employee of the County, nor any member thereof, not any public agency or official affected by this ITB, has any pecuniary interest in the business of the responding firm or his sub-consultant(s) has any interest that would conflict in any manner or degree with the performance related to this ITB.

By submission of a bid, the vendor certifies under penalty of perjury, that to the best of its knowledge and belief:

- (a) The prices in the bid have been arrived at independently without collusion, consultation, communications, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other vendor or with any competitor.
- (b) Unless otherwise required by law, the prices which have been quoted in the bid have not knowingly been disclosed by the vendor prior to opening, directly or indirectly, to any other vendor or competitor.
- (c) No attempt has been made, or will be made, by the vendor to induce any other person, partnership or cooperation to submit or not to submit a bid for the purpose of restricting competition.

For any breach or violation of this provision, the County shall have the right to terminate any related contract or agreement without liability and at its discretion to deduct from the price, or otherwise recover, the full amount of such fee, commission, percentage, gift, payment or consideration.

The successful responding firm shall require each of its sub-consultant(s) to sign a statement certifying to and agreeing to comply with the terms of the Sub-sections above.

XIX. Default

The contract may be cancelled or annulled by the Purchasing Director in whole or in part by written notice of default to the contractor upon non-performance or violation of contract terms. An award may be made to the next low responsive and responsible bidder, or articles specified

may be purchased on the open market similar to those so terminated. In either event, the defaulting contractor (or his surety) shall be liable to the County for costs to the County in excess of the defaulted contract prices; provided, however, that the contractor shall continue the performance of this contract to the extent not terminated under the provisions of this clause. Failure of the contractor to deliver materials or services within the time stipulated on his bid, unless extending in writing by the Purchasing Director, shall constitute contract default.

XX. Disputes

Except as otherwise provided in the contract documents, any dispute concerning a question of fact arising under the contract which is not disposed of shall be decided after a hearing by the Purchasing Director, who shall reduce his/her decision to writing and mail or otherwise furnish a copy thereof to the contractor. The decision of the Purchasing Director shall be final and binding; however, the contractor shall have the right to appeal said decision to a court of competent jurisdiction.

XXI. Substitutions

Bidders offering and quoting on substitutions or who are deviating from the attached specifications shall list such deviations on a separate sheet to be submitted with their bid. The absence of such a substitution list shall indicate that the bidder has taken no exception to the specifications contained herein.

XXII. Ineligible Bidders

The County may choose not to accept the bid of a bidder who is in default on the payment of taxes, licenses, or other monies due to the County. Failure to respond three (3) consecutive times for any given commodity/service may result in removal from the supplier list under that commodity/service.

In compliance with the Americans With Disabilities Act (ADA), Cobb County provides reasonable accommodations to permit a qualified applicant with a disability to enjoy the privileges of employment equal to those employees without disabilities. Disabled individuals must satisfy job requirements for education background, employment experience, and must be able to perform those tasks that are essential to the job with or without reasonable accommodations.

XXIII. Alterations Of Documents

Alterations of County documents are strictly prohibited and will result in automatic disqualification of the firm's solicitation response. If there are "exceptions" or comments to any of the solicitation requirements or other language, then the firm may make notes to those areas, but may not materially alter any document language.

XXIV. Termination For Convenience

The County, by written notice, may terminate this contract, in whole or in part, when it is in the County's interest. If this contract is terminated, the County shall be liable only for goods or services delivered or accepted. The County Notice of Termination may provide the contractor

thirty (30) days prior notice before it becomes effective. However, at the County's sole option a termination of convenience may be effective immediately and may apply to delivery orders (if applicable) or to the contract in whole.

XXV. Inter-governmental Agreement

Other cities and Authorities located in Cobb County will be allowed to purchase identical items at the same price and upon the same terms and conditions, pursuant to the Intergovernmental Cooperative Purchasing Agreements entered into between the BOC and Cobb County Governmental entities listed under the Intergovernmental Cooperative Purchasing Program. These entities include the Cobb County Board of Education and Cities of Acworth, Austell, Kennesaw, Smyrna, Marietta, and Powder Springs and the Cobb County-Marietta Water Authority and the Cobb-Marietta Coliseum and Exhibit Hall Authority.

XXVI. Indemnification and Hold Harmless

By submission of a bid, the selected responding firm agrees to the fullest extent permitted by law to indemnify Cobb County and protect, defend, indemnify and hold harmless Cobb County, its officers, officials, employees and volunteers from and against all claims, actions, liabilities, losses (including economic losses), or costs arising out of any actual or alleged a) bodily injury, sickness, disease, or death; or injury to or destruction of tangible property including the loss of use resulting there from; or any other damage or loss arising out of or resulting claims resulting in whole or part from any actual or alleged act or omission of the responding firm, sub-consultant, anyone directly or indirectly employed by any firm or sub-consultant; or anyone for whose acts any of them may be liable in the performance of work; b) violation of any law, statute, ordinance, governmental administrative order, rule, regulation, or infringements of patent rights or other intellectual property rights by the responding firm in the performance of work; or c) liens, claims or actions made by the responding firm or other party performing the work, as approved by Cobb County. The indemnification obligations herein shall not be limited by any limitation on the amount, type of damages, compensation, or benefits payable by or for the responding firm or its sub-consultant(s), as approved by the County, under workers' compensation acts, disability benefit acts, other employee benefit acts, or any statutory bar or insurance.

XXVII. Special Terms and Conditions

Should these General Terms and Conditions be in conflict with any attached Special Terms and Conditions, the Special Terms and Conditions will control.

XXV. Disadvantaged Business Enterprises (DBE): The following provisions should be carefully read to determine applicability to your business.

Cobb County Government encourages the participation of all businesses in offering their services and/or products. The Cobb County Government has the goal to fairly and competitively procure the best product at the most reasonable cost.

A Disadvantaged Business Enterprise (DBE) is generally defined as a Female, Black American, Hispanic American and any other minority owned business. The Federal Government has long had program in place to ensure participation of DBE vendors and suppliers. The State of Georgia has established a similar program whereby DBE firms are defined, certified and made known. This effort is managed by the Georgia Department of Transportation (GDOT). More information can be obtained from GDOT web site:

1. <http://www.dot.state.ga.us/eeo-div/index.shtml>

The Cobb County Government addresses DBE business participation (frequency and dollar value) in the following ways:

1. Cobb County wishes to identify all DBE participation; both at the contractor and sub-contractor levels in the following ways.
 - a. DBE businesses are requested to identify such status at the time they register as a vendor.
 - b. DBE businesses are requested to identify themselves at the time they propose to do business. Please complete **EXHIBIT B** if applicable and return with bid submittal.
 - c. All businesses will receive with each Purchase Order an instruction sheet for use of the furnished *Cobb County Government DBE Participation Report*, **EXHIBIT C**. Businesses are requested to complete this report and submit it with each invoice for the time period billed.
2. Cobb County has established a Disadvantaged Business Enterprise Plan in accordance with the regulations of the U.S. Department of Transportation (U. S. Department of Transportation (USDOT), 49 CFR Part 26.) The Cobb County Department of Transportation is the lead agency for implementing the USDOT DBE Program for the County.

The Plan applies only to projects which are clearly indicated by the County.

XXVIII. Compliance with Georgia Security and Immigration Compliance Act
PROCEDURES & REQUIREMENTS
(Effective 10-28-2010 - Supersedes All Previous Versions)

BACKGROUND

Pursuant to the “Georgia Security and Immigration Compliance Act,” Cobb County cannot enter into a contract for the physical performance of services unless the contractor registers and participates in the federal work authorization program to verify information of all newly hired employees or subcontractors. Neither may any contractor or subcontractor enter a contract with the county in connection with the physical performance of services unless the contractor and/or subcontractor registers and participates in the federal work authorization program to verify information of all new employees. O.C.G.A. § 13-10-91.

Before any bid for the physical performance of services is considered, the bid must include a signed, notarized affidavit from the contractor attesting to the following: (1) the affiant has registered with and is authorized to use the federal work authorization program; (2) the user ID number and date of authorization for the affiant; and (3) the affiant is using and will continue to use the federal work authorization program throughout the contract period. O.C.G.A. § 13-10-91 (b) (1). Affidavits shall be maintained for five years from the date of receipt. O.C.G.A. § 13-10-91 (b) (1).

Upon contracting with a new subcontractor, a contractor or subcontractor shall, as a condition of the contract or subcontract, provide Cobb County with notice of the identity of any and all subsequent subcontractors hired or contracted by that contractor or subcontractor within five (5) business days of entering into a contract or agreement for hire with any subcontractor. Such notice shall include an affidavit including the subcontractor’s name, address, user ID number, and date of authorization to use the federal work authorization program. O.C.G.A. § 13-10-91 (b) (3).

Based upon the County’s experience and desire for full compliance, no work may be commenced by any subsequent subcontractor prior to notice being received by the County that the subcontractor (regardless of tier) is in compliance with the law and the attached Procedures & Requirements, including the preparation and submission of the Contractor (or Subcontractor) Affidavit & Agreement AND the Immigration Compliance Certificate PRIOR to the commencement of any work.

DEFINITIONS

Affidavit – a written statement made or taken under oath before an officer of the court or a notary public or other person who duly has been authorized so to act.

Affiant – the person who makes and subscribes to a statement made under oath (affidavit).

Physical Performance of Services – the building, altering, repairing, improving, or demolishing of any public structure or building or other public improvements of any kind to public real property, including the construction, reconstruction, or maintenance of all or part of a public road; or any other performance of labor for a public employer under a contract or other bidding process.

PROCEDURES & REQUIREMENTS

1. Bid Documents: Bid documents should contain information regarding the contract language and contractual requirements described below.
2. Responsive Bid Documents: Responsive bid documents MUST INCLUDE a signed, notarized affidavit from the contractor in the form attached as EXHIBIT A (CONTRACTOR AFFIDAVIT & AGREEMENT). **If the affidavit is not submitted at the time of the bid, the applicant will be disqualified.**

THIS AFFIDAVIT MUST BE SIGNED, NOTARIZED AND SUBMITTED WITH ANY BID REQUIRING THE PERFORMANCE OF PHYSICAL SERVICES. IF THE AFFIDAVIT IS NOT SUBMITTED AT THE TIME OF THE BID, THE BID WILL BE DETERMINED TO BE NON-RESPONSIVE AND WILL BE DISQUALIFIED.

3. Contract Language & Contractual Requirements: Affirmative language shall be contained in agreements for the performance of services to cover all statutory and County requirements; such language shall require:
 - (a) That affidavits in the form attached to these “Procedures & Requirements” be executed from a contractor (and any subcontractors, regardless of tier) and notarized, showing compliance with the requirements of O.C.G.A. § 13-10-91 and that such be made part of the contract and/or subcontracts;
 - (b) That the contractor (and any subcontractors, regardless of tier) fully comply with the requirements for completing and submitting the “Immigration Compliance Certification” and that such certification be received by the County prior to the commencement of any work under the contract or subcontract;
 - (c) That the contractor (or any subcontractor, regardless of tier) notify the County within five (5) business days of entering into a contract or other agreement for hire with any subcontractor(s), regardless of tier;
 - (d) That the contractor be responsible for obtaining and providing to the County the “Subcontractor Affidavit & Agreement” and “Immigration Compliance Certification” attached to and required under these “Procedures & Requirements” from each subcontractor, regardless of tier, employed or retained for work under the contract prior to the commencement of any work under the contract or any subcontract;
 - (e) That Cobb County, Georgia, reserves the right to dismiss, or require the dismissal of, any contractor or subcontractor for failing to provide the required affidavit or certification and/or for failure to comply with the statutory requirements of O.C.G.A. § 13-10-91 and/or for providing false or misleading information upon the required affidavit(s) or certification(s);
 - (f) That any contractor and/or subcontractor retaining any other subcontractor to perform services under the contract provide legal notice to any subcontractor of the requirements of Cobb County for immigration compliance and further provide notice that Cobb County, Georgia, reserves the right to dismiss, or require the dismissal of, any contractor or subcontractor for failing to provide the required affidavit or certification and/or for failure to comply with the statutory requirements of O.C.G.A. § 13-10-91 and/or for providing false or misleading information upon the required affidavit(s) or certification(s);

(g) That failure to comply with any of the requirements and procedures of the County (i.e., failure to timely supply required affidavits or compliance certification documents; failure to utilize federal work authorization procedures; failure to permit or facilitate audits or reviews of records by County or State officials upon request; and/or failure to continue to meet any of the statutory or County obligations during the life of the contract) shall constitute a material breach of the agreement and shall entitle the County to dismiss any general contractor or to require the dismissal of any subcontractor or sub/subcontractor (irrespective of tier) for failing to fully comply with these requirements;

(h) That upon notice of a material breach of these provisions, the contractor (or subcontractor, regardless of tier) shall be entitled to cure the breach within ten (10) days and provide evidence of such cure. Should the breach not be cured, the County shall be entitled to all available remedies, including termination of the contract, the requirement that a subcontractor be dismissed from performing work under the contract, and any and all damages permissible by law.

4. Immigration Compliance Certification: Prior to commencing work under any contract for the physical performance of services, the contractor shall complete the “IMMIGRATION COMPLIANCE CERTIFICATION” form attached to these “Procedures & Requirements” and submit the same to the County.

Prior to allowing any other subcontractor to perform work under the contract, the contractor shall obtain a completed “IMMIGRATION COMPLIANCE CERTIFICATION” from each subcontractor (regardless of tier) and submit the same to the County.

FORM ATTACHMENTS:

1. CONTRACTOR AFFIDAVIT & AGREEMENT (EXHIBIT A);
2. SUBCONTRACTOR AFFIDAVIT & AGREEMENT (EXHIBIT A-1);
3. IMMIGRATION COMPLIANCE CERTIFICATION (EXHIBIT A-2).

**CONTRACTOR AFFIDAVIT & AGREEMENT
(EXHIBIT A)**

This affidavit must be signed, notarized and submitted with any bid requiring the performance of physical services. If the affidavit is not submitted at the time of the bid, the bid will be determined non-responsive and will be disqualified.

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is contracting with Cobb County, Georgia, has registered with, is authorized to use, and is participating in a federal work authorization program (an electronic verification of work authorization program operated by the U.S. Department of Homeland Security or any equivalent federal work authorization program operated by the U.S. Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA) <http://www.uscis.gov/portal/site/uscis/menuitem.eb1d4c2a3e5b9ac89243c6a7543f6d1a/?vgnextoid=75bce2e261405110VgnVCM1000004718190aRCRD&vgnnextchannel=75bce2e261405110VgnVCM1000004718190aRCRD>). The undersigned contractor further attests that it will continue to use the federal Employment Eligibility Verification (EEV) work authorization program throughout the contract period.

The undersigned further agrees that should it employ or contract with any subcontractor(s) or should its subcontractor(s) employ other subcontractor(s) for the physical performance of services pursuant to the contract with Cobb County, Georgia, the contractor or subcontractor will:

- (1) Notify the County within five business days of entering into a contract or agreement for hire with any subcontractor(s);
- (2) Secure from any subcontractor(s) and/or their subcontractor(s) verification of compliance with O.C.G.A. § 13-10-91 on the attached Subcontractor Affidavit (EXHIBIT A-1) prior to the commencement of any work under the contract/agreement;
- (3) Secure from any subcontractor(s) and/or their subcontractor(s) a completed Immigration Compliance Certification (EXHIBIT A-2) prior to the commencement of any work under the contract/agreement;
- (4) Provide the subcontractor(s) with legal notice that Cobb County, Georgia, reserves the right to dismiss, or require the dismissal of, any contractor or subcontractor for failing to provide the affidavit and/or for failure to comply with the requirements referenced in the affidavit;
- (5) Maintain records of such compliance and provide a copy of each such verification to Cobb County, Georgia, at the time the subcontractor(s) is retained to perform such services or upon any request from Cobb County, Georgia; and
- (6) Maintain such records for a period of five (5) years.

EEV (E-Verify) Program User ID Number

EEV Program Date of Authorization

BY: Authorized Officer or Agent
[Contractor Name]

Contractor Business Name

Printed Name

Date

SWORN AND SUBSCRIBED BEFORE ME
ON THIS THE ____ DAY OF _____, 201__

Notary Public Commission Expires: _____

Effective 10-28-2010

**SUBCONTRACTOR AFFIDAVIT & AGREEMENT
(EXHIBIT A-1)**

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of Cobb County, Georgia, has registered with, is authorized to use, and is participating in a federal work authorization program (an electronic verification of work authorization program operated by the U.S. Department of Homeland Security or any equivalent federal work authorization program operated by the U.S. Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA)). The undersigned contractor further attests that it will continue to use the federal Employment Eligibility Verification (EEV) work authorization program throughout the contract period.

The undersigned further agrees that should it employ or contract with any subcontractor(s) or should its subcontractor(s) employ other subcontractor(s) for the physical performance of services pursuant to the contract with Cobb County, Georgia, the undersigned subcontractor will:

- (1) Notify the County within five business days of entering into a contract or agreement for hire with any subcontractor(s);
- (2) Secure from any subcontractor(s) and/or their subcontractor(s) verification of compliance with O.C.G.A. § 13-10-91 on this Subcontractor Affidavit form (EXHIBIT A-1) prior to the commencement of any work under the contract/agreement;
- (3) Secure from any subcontractor(s) and/or their subcontractor(s) a completed Immigration Compliance Certification (EXHIBIT A-2) prior to the commencement of any work under the contract/agreement;
- (4) Provide the subcontractor(s) with legal notice that Cobb County, Georgia, reserves the right to dismiss, or require the dismissal of, any contractor or subcontractor for failing to provide the affidavit and/or for failure to comply with the requirements referenced in the affidavit;
- (5) Maintain records of such compliance and provide a copy of each such verification to Cobb County, Georgia, at the time the subcontractor(s) is retained to perform such services or upon any request from Cobb County, Georgia; and
- (6) Maintain such records for a period of five (5) years.

EEV (E-Verify) Program User ID Number

EEV Program Date of Authorization

BY: Authorized Officer or Agent
[Subcontractor Name]

Subcontractor Business Name

Printed Name

Date

SWORN AND SUBSCRIBED BEFORE ME
ON THIS THE ____ DAY OF _____, 201__

Notary Public Commission Expires: _____

Effective 10-28-2010

IMMIGRATION COMPLIANCE CERTIFICATION
(Required to be completed by Contractors and all Subcontractors)
(EXHIBIT A-2)

I certify to the Cobb County Board of Commissioners that the following employees will be assigned to:

(Project Name/Description)

I further certify to Cobb County, Georgia the following:

- The E-Verify program was used to verify the employment eligibility of each of the above-listed employees hired after the effective date of our contract to use the program;
- We have not received a Final Nonconfirmation response from E-Verify for any of the employees listed.
- If we receive a Final Nonconfirmation response from E-Verify for any of the employees listed above, we will immediately terminate that employee's involvement with the project.
- I have confirmed that we have an I-9 on file for every employee listed above and that to the best of my knowledge all the I-9's are accurate.
- To the best of my knowledge and belief, all of the employees on the above list are legally authorized to work in the United States.
- If any other employee is assigned to this Cobb County project, a certification will be provided for said employee prior to the employee commencing work on the project.

To the best of my knowledge and belief, the above certification is true, accurate and complete.

Sworn to by:

Employer Name & Address:

Signature of Officer

Printed Name/Title

Date

SWORN AND SUBSCRIBED BEFORE ME
ON THIS THE ____ DAY OF _____, 201__

Notary Public
Commission Expires: _____

Effective 10-28-2010

EXHIBIT B

DISADVANTAGED BUSINESS ENTERPRISE (DBE) IDENTIFICATION FORM

A Disadvantaged Business Enterprise (DBE) is generally defined as a Female, Black American, Hispanic American and any other minority owned business. If your firm is classified as a Disadvantaged Business Enterprise (DBE), please complete this form and submit with bid response or send to:

Cobb County Purchasing Department
Attn: Purchasing Director
1772 County Services Parkway
Marietta, GA 30008
Fax: 770-528-1154
Email: purchasing@cobbcounty.org

Name of Business: _____

Address: _____

Telephone: _____

Fax: _____

Email: _____

Certification Number: _____

Name of Organization Certification _____

**This information is acquired for informational purposes only and will
have no bearing on the award unless otherwise stated**

Instructions for Completing Exhibit C
Disadvantaged Business Enterprise (DBE)
Participation Report

All Cobb County Government contractors or vendors are requested to complete a report descriptive of any DBE subcontractor involvement in work for which the government is making payment. If otherwise specified in an RFP/ITB or contract, additional reporting forms may be required as well.

The objective of this request is to assist in the identification of Disadvantaged Business Enterprise (DBE) business participation with the Cobb County Government and to quantify that participation.

The Cobb County Government does not administer a DBE Certification Program. The principle certification agency for the State of Georgia is the Georgia Department of Transportation. As a Contractor/Vendor you are not responsible for verification of any DBE Certification information of your subcontractor.

***** Instructions *****

1. Contractor/Vendor is furnished the one-page ***DBE Monthly Participation Report*** with each Cobb County Government-issued Purchase Order.
2. Contractor/Vendor completes this report for each billing period and attaches it to the invoice to then be sent to the County department/agency receiving the service or product.
3. Upon receipt of a Contractor/Vendor invoice and DBE report, the County department/agency receiving the service or product should keep a copy of the completed DBE report for their reporting process. In order to add or verify the prime contractor is registered as a DBE vendor in AMS, the County department/agency should send a copy of the DBE report to:

Cobb County Purchasing Division
Attn.: DBE Report

A Disadvantaged Business Enterprise (DBE) is a firm that is under the control of someone in an ownership position (at least 51%) that:

1. Has membership in one or more of the following groups: Female, Black American, Hispanic American, Native American, Subcontinent Asian American and Asian-Pacific America. There may be other groups that may be eligible to be certified as DBE.
2. Is a U.S. citizen or lawfully admitted permanent resident of the U.S.
3. Has a personal net worth which does not exceed \$750,000.
4. The business meets the Small Business Administration's size standard for a small business. Its annual gross receipts for the three previous fiscal years cannot have exceeded \$22,410,000. Depending on the type of work the business performs, other size standards may apply.
5. The business is organized as a for-profit business.
6. The business may also be DBE eligible as a certified U.S. Small Business Administration 8 (a) program.

Exhibit C
Cobb County Government Disadvantaged Business Enterprise Participation
Monthly Report

Contractor/Vendor: Please keep this blank report to make copies as needed. Print or type in the report, then send the completed report to the County department/agency receiving the service or product.

County Departments: Keep a copy of this completed report and use the dollar figures to input into your quarterly DBE report to the DBE Liaison (Records Management Division). If you already have a similar reporting method of gathering the dollar figures continue to use it. Send a copy of this completed report to the Purchasing Division (Attn: DBE Report) to add or verify the prime contractor is registered as a DBE vendor in AMS.

Submitted by: _____ Month Invoiced: _____
Name of Prime Contractor/Vendor **From/To:**

Cobb County Project Name: _____ Bid or P.O. Number: _____

Cobb County Department or Agency receiving service or product: _____

Description of Purchased Service/Product: _____

Full Contracted Amount: \$_____ Payment amount requested at this time: \$_____

1. Are YOU, the Prime Contractor a DBE business? YES _____ NO _____
2. Are YOUR subcontractors DBE vendors? YES _____ NO _____

Please provide information below for each participating DBE subcontractor(s).

DBE Subcontractor Business Name	Type Service or Product Supplied	DBE Subcontractor Business/Contact Tel. Number	Actual Dollar Value of DBE Subcontractor Participation this Reporting Month
			\$
			\$
			\$
			\$
			\$
			\$

Submitted by: _____
Printed Name

Title or position: _____

Date Completed: _____

Signature of Authorized Representative



SAMPLE CONTRACT

Date: / /20xx

OWNER: COBB COUNTY BOARD OF COMMISSIONERS ("Owner")
COBB COUNTY, GEORGIA
c/o Property Management Department
1150 Powder Springs Street, Suite 200
Marietta, Georgia 30064

CONTRACTOR: ("Contractor")

WORK: ("Work")
(General caption only)

PROJECT: ("Project")

ARCHITECT-ENGINEER: N/A ("Architect")

CONTRACT PRICE: ("Price")
and 00/100 (\$.00)

MONTHLY BILLING DATE: To be received at the ("Monthly Billing Date")
Cobb County Property Management office by the 25th of each month.

RETAINED PERCENTAGE: Ten (10%) Percent, ("Retained Percentage")
adjusted per paragraphs 3 & 4

CHANGE ORDER COMBINED OVERHEAD AND PROFIT: ("Profit Percentage")
Fifteen (15%) Percent

PAYMENT AND PERFORMANCE BONDS: Required___ Not Required___

(The above terms are incorporated by reference and are more fully explained below.)

Owner, and Contractor, with offices at the addresses shown above, agree for themselves, their successors and assigns as follows:

1 . WORK: Contractor shall perform and furnish all labor, supervision, services, materials, equipment, tools, scaffolds, hoisting, transportation, storage and all other things necessary to prosecute and complete the work identified and described in, or which can be reasonably inferred from, Schedule A attached hereto (the "Work"). The Work shall be performed by Contractor in a good and workmanlike manner strictly in accordance with the Contract Documents, consisting of the plans, specifications (including, but not limited to, general, special and supplemental conditions), addenda and other documents identified in Schedule B attached hereto, and all subsequently and duly issued modifications thereto.

Contractor represents and agrees that it has carefully examined and understands the Contract Documents relevant to the Work; has

adequately investigated the nature and conditions of the project site and locality; has familiarized itself with conditions affecting the difficulty of the Work and the condition of any equipment to be maintained and/or repaired; and has entered into this Contract based on its own examination, investigation and evaluation and not in reliance upon any opinions or representations of Owner.

2. PRICE: Owner shall pay to Contractor for the satisfactory performance and completion of the Work and performance of all the duties, obligations and responsibilities of Contractor under this Contract, the sum set forth herein as the Price, subject only to additions and deductions as expressly provided in this Contract. To the extent that the Work is to be performed on a unit price basis, the Price shall be computed in accordance with the unit prices set forth in Schedule C, based on actual quantities determined in accordance with the Contract Documents and this Contract. The Price and all unit prices shown in Schedule C shall be deemed to include all costs of Contractor's performance of the Work as set forth in the Contract Documents, including, but not limited to, the costs of labor, supervision, services, materials, equipment, replacement parts/equipment, tools, scaffolds, hoisting, transportation, storage, insurance and taxes, and all overhead and profit.

3. PROGRESS PAYMENTS: Within ten (10) days after the date of transmission of this Contract to Contractor, Contractor shall submit to Owner for Owner's approval a detailed schedule showing a proper cost breakdown (with a proper share of associated overhead and profit) of the Price according to the various line items or parts, of the Work, for use only as a basis for verifying Contractor's applications for payment.

The Contractor shall submit an Application for Payment on the 25th of each month. The Contractor will provide with the Payment Application, a line item breakdown of all previous costs to date plus the amount being applied for. The Owner will make payments to the Contractor within a reasonable period of time after receipt of the Payment Application equal to the value of the Completed Work and Stored Work as of the corresponding Monthly Billing Date, to the extent approved by Owner and Architect, and after deducting (a) all previous payments, (b) current retainage (to a maximum of 10 percent of each progress payment; provided, however, that, when 50 percent of the contract value including change orders and other additions to the Contract value provided for by the Contract Documents is due and the manner of completion of the Contract Work and its progress are reasonably satisfactory to the Owner's authorized Contract Representative, the Owner shall withhold no more retainage. If, after discontinuing the retention, the Owner's authorized Contract Representative determines that the Work is unsatisfactory or has fallen behind schedule, retention may be resumed at the previous level.), (c) all charges or backcharges for services, materials, equipment, or other items furnished or otherwise chargeable to Contractor, and (d) withheld payments if the Owner determines there is unsatisfactory job progress, defective work, disputed work, actual or potential third party claims, failure to make timely payments for labor or materials, damage to other entities connected with the project or reasonable evidence that the contract cannot be completed for the balance of the contract price. Payments that are not unreasonably delayed will bear no interest penalties. The terms of this paragraph and the entire Contract Documents are intended to supersede all provisions of the Prompt Pay Act, O.C.G.A. 13-11-1 through 13-11-11.

Owner reserves the right to advance the date of any payment (including final payment) due or to become due under this Contract if, in its sole judgment, it becomes desirable to do so. The Owner shall not thereby incur any obligation to do so in the future or waive his right to strict compliance with the Contract terms.

Contractor shall not be entitled to any payment until this Contract has been properly executed and all documents and information to be furnished by Contractor have been supplied to Owner. If Owner has a dispute over a portion of the invoices, the undisputed portion will be paid.

4. FINAL RETAINAGE PAYMENT: At substantial completion of the Work and as the Owner's authorized Contract Representative determines the Work to be reasonably satisfactory, the Owner shall within 30 days after the last of the following to occur: (a) delivery of a final application for payment, (b) furnishing of evidence satisfactory to Owner that there are no claims, obligations, or liens outstanding or unsatisfied for labor, services, materials, equipment, taxes, or other items performed, furnished or incurred in connection with the Work, (c) delivery of all guaranties, warranties, bonds, instruction manuals, performance charts, diagrams, as-built drawings and similar items required of Contractor or its suppliers or subcontractors and (d) delivery of a general release, in a form satisfactory to Owner, executed by Contractor running to and in favor of Owner, and such other parties as Owner may require; pay the retainage to the Contractor. If at that time there are any remaining incomplete minor items, an amount equal to 200 percent of the value of each item as determined by the Owner's authorized Contract Representative shall be withheld until such item or items are completed to the Owner's satisfaction.

5. PAYMENT CONDITIONS: Contractor will receive the payments made by Owner and Contractor will hold such payments as a trust fund to be applied first to the payment of laborers, suppliers, subcontractors, and others responsible for the Work for which such payments are made, including sufficient funds so that all taxes and insurance applicable thereto are also paid and shall comply with all laws applicable thereto.

Contractor shall, as often as requested by Owner, furnish such information, evidence and substantiation as Owner may require with respect to the extent and value of current progress and the nature and extent of all obligations incurred by Contractor in connection with the Work and all payments made by Contractor on account thereof. Contractor shall also furnish, as required by Owner in its sole discretion, such partial or final lien waivers or releases as Owner deems necessary to ensure that Contractor has paid all persons furnishing any labor, material, or services in furtherance of any Work furnished hereunder. If required by Owner, the furnishing of such lien waivers and releases shall be a condition precedent to any payment hereunder. Nothing herein shall constitute any requirement that Owner exercise its discretionary option to require such releases and waivers. Moreover, no prior failure of Owner to require such releases and waivers shall limit Owner's right to require them subsequently.

Owner reserves the right to withhold, as a reserve and without limiting its other rights and remedies, an amount sufficient: (a) to defend, satisfy and discharge any asserted claim that Contractor (or anyone providing any of the Work hereunder) has failed to make payment for labor, services, materials, equipment, taxes, or other items or obligations furnished or incurred in connection with the Work or has caused damage to the Work or to any other work on the Project; (b) to complete the Work if it appears that funds remaining in the Contract, including retainage and exclusive of backcharges, are insufficient to complete the Work;

(c) to reimburse Owner for any backcharges incurred as a result of any act or omission by Contractor hereunder; (d) to protect Owner from the possible consequences of any other breach or default by Contractor hereunder; or (e) to secure Owner with respect to any breach or default by Contractor or its affiliates, parent company and subsidiaries under any other agreement. Payment hereunder shall not be evidence of the proper performance or progress of the Work and no payment shall be construed to be acceptance of defective, faulty or improper work or materials.

6. TIME: Time is of the essence. Therefore, Contractor shall: (a) submit, with its proposed schedule, information showing the time

required to prepare and approve shop drawings, to fabricate and deliver materials and equipment, and to install the Work; (b) order (for manufacture or purchase or delivery) all materials required for performance of the Work as soon as possible in order to avoid delays caused by strikes; transportation or unavailability; (c) furnish Owner within thirty (30) days a list of major materials and equipment required for the Work, showing the name, address and telephone number of the supplier and the date on which such material and equipment is expected to be delivered to the Project site; (d) furnish Owner, upon issuance, a copy of each major purchase order and subcontract (with price information deleted); (e) cause a qualified home office supervisory representative (while Contractor has forces at the Project site and for two weeks prior thereto) to attend weekly progress meetings; and (f) notify Owner immediately by telephone and confirm in writing within ninety-six (96) hours, if Contractor finds that any item cannot be delivered as required to maintain Owner's progress schedule. Contractor also agrees to be bound by such modifications to the Project schedule as are discussed at the weekly job progress meetings and are contained in the minutes of those meetings unless written objection is made by Contractor within seventy-two (72) hours of the occurrence of such meeting.

7. EXTENSIONS OF TIME: Should Contractor, without any fault or neglect on its own part, be delayed in the completion of the Work by the fault or neglect of Owner, Contractor, as its sole remedy, shall be entitled to a reasonable extension of time only. Should Contractor, without any fault or neglect on its own part, be delayed in the completion of the Work by an act of God or such other cause beyond the control of the Contractor, Contractor shall be entitled to a reasonable extension of time to be determined in accordance with this Contract and the Contract Documents. In no event shall Contractor be entitled to compensation or damages for any delay in the commencement, prosecution, or completion of the Work or for any schedule adjustments resulting therefrom.

Notwithstanding anything to the contrary in the Contract Documents or this Contract, Contractor shall not be entitled to an extension of time unless a written notice of delay shall have been delivered to Owner within ninety-six (96) hours after commencement of the claimed delay.

8. CHANGE ORDERS: Without notice to any surety and without invalidating this Contract, Owner may from time to time, solicit an offer by written order to Contractor to make changes in the Work under the Contract Documents.

Upon request of Owner, and in a timely manner, Contractor shall submit a written offer and proposal for any applicable Price and time adjustment attributable to the changed Work, detailed as Owner may require, supported and conforming to the requirements of the Contract Documents.

Where a change is issued pursuant to a change required by the Owner, the Price shall be adjusted by the net amount of any direct savings and direct cost plus Profit Percentage, attributable to the Change Order, and the time for performance of the Work may be adjusted according to the Contract Documents, subject, however, in each case to the following limitations: (a) where the Work affected by Change Order is the subject of unit prices under Exhibit C, the Price adjustment shall be limited to the amounts obtained by applying such unit prices to the actual increase or decrease in the quantity of units due to the change, and (b) the amount allowable for all overhead and profit shall be limited to the product obtained by multiplying the Profit Percentage by the net amount of the Contractor's direct savings and direct cost.

As used in this contract, Contractor's direct savings and direct cost shall mean and be limited to the actual amount of the following: cost of materials, including sales tax and cost of delivery; cost of labor, including social security, old age and unemployment insurance, and fringe benefits required by agreement or custom; worker's compensation insurance; bond premiums if and to the extent actually increased; and actual rent not greater than the rent charged in the locale, or reasonable value of Contractor-owned equipment and machinery.

If the parties are able to agree upon the amount of the Price adjustment and the extent of any time adjustment, such adjustment shall be set forth and memorialized in a Change Order which shall be accepted by Contractor. If the parties are unable to agree upon such adjustments, Owner may elect to issue the Change Order to Contractor directing such work to be performed by Contractor, and any adjustments to Price or time shall be subject to ultimate determination in accordance with this contract; and Contractor shall, nonetheless, proceed immediately with the changed Work. Contractor shall keep a detailed account of the direct savings and direct cost due to the changed Work separately from its other accounting records and shall make such records available to the Owner at Owner's request. Failure to keep adequate and separate cost records of the changed Work, and to furnish same to Owner upon its request, shall constitute an acceptance on Contractor's part of the Owner's determination of the direct savings and direct cost of such changed Work. In no event shall Contractor proceed with changed Work without a Change Order issued pursuant to this paragraph 8 and Owner shall not be liable for any additional costs incurred or delays encountered in the performance of such changed Work without such a written Change Order.

9. NOTICES: All Written notices provided for in this contract or in the Contract Documents shall be deemed given if delivered personally to a responsible representative of the party, sent by telegram, fax with fax acknowledgment, or by regular mail to the party at its address specified herein. Either party may from time to time, by notice to the other as herein provided, designate a different address to which notices to it should be sent.

10. BONDS: If so indicated on page 1 hereof, Contractor shall furnish, within ten (10) days of date of transmission of this contract to Contractor, which is included in the Price, a performance bond and a payment bond, each in an amount equal to the Price, on standard Cobb County forms and Contractor agrees to notify its surety or sureties of increases in the Price and to take such action as is required to have the penal amount of the bonds furnished pursuant to this paragraph increased correspondingly.

11. INSURANCE: Contractor shall procure and maintain for the duration of the contract, insurance against claims for injuries to persons or damages to property that may arise from or in connection with performance of the Work hereunder by the Contractor, his agents, representatives, employees, or subcontractors.

A. MINIMUM LIMITS OF INSURANCE

Contractor shall maintain limits no less than:

1. General Liability: \$1,000,000 combined single limit per occurrence for comprehensive coverage including bodily injury, personal injury and property damage for premises/operations, products/completed operations, contractual liability, independent contractors, broad-from property damage, and underground, explosion and collapse hazard.
2. Automobile Liability: \$1,000,000 combined single limit per accident for bodily injury and property damage including all owned, hired, and non-owned.
3. Workers' Compensation and Employers Liability: Workers' Compensation limits as required by the Labor code of the State of Georgia and Employers Liability of \$100,000 per accident.
4. Umbrella Liability: \$5,000,000 combined single limits per occurrence.

B. DEDUCTIBLES AND SELF-INSURED RETENTION

Any deductibles or self-insurance retentions must be declared to and approved by the Owner. At the option of the Owner, either: The insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the Owner, its officers officials, and employees; or the Contractor shall procure a bond guaranteeing payment of losses related to investigations, claim administration and defense expenses.

C. OTHER INSURANCE PROVISIONS

1. General Liability, Automobile Liability, and Umbrella Liability Coverages.

The Owner and its officers, officials, employees and volunteers are to be covered as additional insureds as respects: liability arising out of activities performed by or on behalf of the Contractor.

Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the Owner and its officers, officials, employees and volunteers.

The Contractor is responsible for insuring its own property and equipment.

2. Workers' Compensation and Employers Liability Coverage. The insurer shall agree to waive all rights of subrogation against the Owner and its officers, officials, employees and volunteers for losses arising from the work performed by the Contractor for the Owner.
3. All Coverages: Each insurance policy required by this clause shall be endorsed to state that coverage shall not be changed, cancelled, suspended, terminated or non-renewed except after sixty (60) days prior written notice by certified mail, return receipt requested, has been given to Cobb County of said change of coverage, cancellation, suspension, termination / or non-renewal.

D. ACCEPTABILITY.

Insurance is to be placed with insurers with a Best's rating of no less than

A: VII, or otherwise acceptable to the Owner.

E. VERIFICATION OF COVERAGE.

Contractor shall furnish the Owner with certificates of insurance and with original endorsements effecting coverage required by this clause. These certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The certificates and endorsements are to be received and approved by the Owner before any work commences. The Owner reserves the right to require complete, certified copies of all required insurance policies at any time.

F. SUBCONTRACTORS

Subcontractor means one not in the employment of the Contractor who is performing all or part of the services under this Agreement under a separate contract with the Contractor.

Contractor shall include all subcontractors as an additional insured under its insurance or shall ensure that subcontractors have met the insurance requirements of this agreement. Owner may request evidence of subcontractor's insurance.

Contractor is responsible for having all subcontractors comply with all terms and conditions of the Invitation to Bid.

G. WAIVER OF SUBROGATION

Vendor shall require all insurance policies in any way related to the work and secured and maintained by Vendor to include clauses stating each underwriter shall waive all rights of recovery, under subrogation or otherwise, against Customer. Vendor shall require of subcontractors, by appropriate written agreements, similar waivers each in favor of all parties enumerated in this section.

12. INDEMNITY: To the full extent permitted by law, Contractor agrees to defend, indemnify and save harmless Owner, and their agents, servants and employees, from and against any claim, cost, expense, or liability (including legal fees, including but not limited to attorney's fees), attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of property (including loss of use thereof), caused by, arising out of, resulting from, or occurring in connection with the performance of the Work by Contractor, its subcontractors and suppliers, or their agents, servants, or employees, whether or not caused in part by the active or passive negligence or other fault of a party indemnified hereunder, to the

extent allowed by law; provided, however, Contractor's duty hereunder shall not arise if such injury, sickness, disease, death, damage, or destruction is caused by the sole negligence of a party indemnified hereunder. Contractor's obligation hereunder shall not be limited by the provisions of any worker's compensation or similar act. Contractor hereby agrees that One Hundred Dollars and No/Cents (\$100.00) of the Price constitutes the separate consideration for Contractor's indemnity hereunder. Such amount shall be deemed paid out of the first application for payment paid hereunder.

Should any person or entity assert a claim or institute a suit, action, or proceeding against Owner involving the manner or sufficiency of the performance of the Work, Contractor shall upon request of Owner promptly assume the defense of such claim, suit, action or proceeding, at Contractor's expense, and Contractor shall indemnify and save harmless Owner as well as anyone to be defended, indemnified and held harmless by Owner and its or their agents, servants, and employees, from and against any liability, loss, damage, or expense arising out of or related to such claim, suit, action, or proceeding.

13. ASSIGNMENT: Contractor shall not assign this contract or any monies due or to become due hereunder without the prior written consent of Owner. No assignment by Contractor of any right hereunder shall be effective and any such attempt shall be null and void. No third party shall have any right to enforce any right of Contractor under this contract. If Owner gives written consent to an assignment of this contract, in whole or in part, Contractor shall not be relieved of its duties and obligations hereunder and shall be and remain fully responsible and liable for the acts and omissions of its assignees. Nothing herein shall prevent Contractor from engaging subcontractors to perform a portion of the Work hereunder. However, Contractor shall be and remain as fully responsible for all persons directly or indirectly employed by such subcontractors, as Contractor is for its own acts and omissions and those of its agents, servants, and employees. Additionally, nothing herein shall prevent any guarantor or surety of Contractor from enforcing any right hereunder after acknowledgment of its obligation as guarantor or surety. Any attempted enforcement of such rights in the absence of an express acknowledgment shall constitute an admission by any guarantor or surety of its obligations under its agreement of guarantee or suretyship.

14. COMPLIANCE: Contractor shall, at its own expense, obtain all necessary licenses and permits pertaining to the Work and comply with all statutes, ordinances, rules, regulations and orders of any governmental or quasi-governmental authority having jurisdiction over the Work or the performance thereof, including, but not limited to, those relating to safety, wages, discrimination and equal employment opportunity. Contractor shall promptly correct any violations of such statutes, ordinances, rules, regulations and orders committed by Contractor, its agents, servants and employees; and Contractor shall receive and respond to, and shall defend, indemnify and save harmless Owner, as well as anyone to whom Owner is obligated, and their agents, servants and employees from and against any loss, liability, or expense arising from, any such violations and any citations, assessments, fines, or penalties resulting therefrom.

15. SAFETY: Contractor agrees that the prevention of accidents to persons engaged upon or in the vicinity of the Work is its responsibility. Contractor shall establish and implement safety measures, policies and standards conforming to those required or recommended by governmental or quasi-governmental authorities having jurisdiction.

16. CLEANING UP: Contractor shall, at its own expense: (a) keep the premises at all times free from waste materials, packaging and other debris accumulated in connection with the Work by collecting and removing such debris from the job site on a daily or other basis requested by Owner; (b) at the completion of the Work in each area, sweep and otherwise make the Work in its immediate vicinity "broom-clean;" (c) remove all of its tools, equipment, scaffolds, temporary structures and surplus materials as directed by Owner at the completion of the Work; and (d) at final inspection clean and prepare the Work for acceptance by Owner. Contractor agrees to provide all cleaning and cleanup required under the Contract Documents pertaining to the Work to the extent such requirements are in excess of those contained in this paragraph.

17. TEMPORARY FACILITIES: All temporary site facilities, such as storage, sheds, water, heat, light, power, toilets, hoists, elevators, scaffolding, cold weather protection, ventilating, pumps, watchman service, etc., required in performing the Work shall be furnished by Contractor.

18. QUALITY: Contractor shall at all times provide first-quality, new materials (unless otherwise specified in the Contract Documents) and workmanship conforming to the Contract requirements. Contractor shall at all times provide proper facilities and an opportunity for the inspection of the Work by Architect and Owner and their representatives. Contractor shall, within forty-eight (48) hours after receiving written notice from Owner, proceed to take down and remove all portions of the Work which Owner shall have condemned as unsound, improper, or in any way failing to conform to the Contract Documents or this Contract and shall replace the same with proper and satisfactory Work and make good all work damaged or destroyed thereby. Owner's failure to discover or notify Contractor of defective or nonconforming Work at the time the Work, or any portion thereof, is performed or completed shall not relieve Contractor of full responsibility for replacement of the defective or nonconforming Work and all damages resulting therefrom.

19. GUARANTEES: Contractor warrants and guarantees the Work to the full extent provided for in and required by the Contract Documents. Without limiting the foregoing or any other liability or obligation with respect to the Work, Contractor shall, at its expense and by reason of its express warranty, make good any faulty, defective, or improper parts of the Work discovered within one year from the date of acceptance of the Project by the Architect and Owner or within such longer period as may be provided in the Contract Documents. Contractor warrants that all materials furnished hereunder meet the requirements of the Contract Documents and impliedly warrants that they are both merchantable and fit for the purposes for which they are to be used under the Contract Documents.

20. SUBMITTALS: Contractor shall immediately prepare or obtain and promptly submit to Owner shop and erection drawings, samples, product data, catalogue cuts, laboratory and inspection reports and engineering calculations, all as may be required by the Contract Documents or as may be necessary or appropriate to describe the details of the Work. Approval of drawings or other submittals by Owner or Architect shall not relieve Contractor of its obligation to perform the Work in strict accordance with the Contract Documents or its responsibility for proper matching of the Work to contiguous work.

21. LIENS: Contractor shall defend, indemnify and save harmless Owner from any lien or claim of lien filed or maintained by any laborer, materialman, subcontractor, or other person or entity directly or indirectly acting for, through, or under Contractor, against the Project or any

part thereof or any interest therein or against any monies due or to become due from Owner to Contractor. Without limiting the foregoing, Contractor shall cause any such lien or claim of lien to be satisfied, removed, or discharged by bond, payment, or otherwise within such time as provided under the Contract Documents or ten (10) days from the date of receipt by the Owner, whichever is shorter.

22. PATENTS: Contractor shall defend, indemnify and save harmless Owner, from and against any claim, cost, expense, or liability (including attorneys' fees) arising out of or resulting from infringement or alleged infringement of any patent rights attributable to the Work.

23. LABOR: Contractor agrees that where its Work is stopped, delayed, or interfered with by strikes, slow-downs, or similar interruptions or disturbances (including cases where the Contractor's employees are engaged in a work-stoppage solely as a result of a labor dispute involving Owner or others and not in any manner involving Contractor,) Owner shall have the rights and remedies provided for herein. Contractor shall maintain and exercise control over all employees engaged in the performance of the Work, and Contractor shall, to the extent permitted by law, remove or cause to be removed from the Project any employee whose presence is detrimental to the orderly prosecution of the Work. Contractor shall take all necessary steps to restrain and enjoin any illegal picketing, demonstrating, violence, or similar activity against the Contractor at the Project.

24. DAMAGE: Owner shall not be liable or responsible for loss or damage to the equipment, tools, facilities, or other personal property owned, rented, or used by Contractor, or anyone employed by or through Contractor, in the performance of the Work; and Contractor shall maintain such insurance and take such protective action as Contractor deems desirable with respect to such property. Owner shall not be liable or responsible for any loss or damage to the Work, and Contractor shall be responsible for the correction or restoration of any such loss or damage to the Work, or to the work of Owner or any other contractor, resulting from the operations of Contractor, or its subcontractors, agents, servants, or employees hereunder. Contractor shall take all reasonable precautions to protect the Work from loss or damage prior to acceptance by Owner.

25. DEFAULT: Should Contractor at any time: (a) fail to supply the labor, materials, equipment, supervision and other things required of it in sufficient quantities and of required quality to perform the Work with the skill, conformity, promptness and diligence required hereunder; (b) cause interference, stoppage, or delay to the Project or any activity necessary to complete the Project; (c) become insolvent; or (d) fail in the performance or observance of any of the covenants, conditions, or other terms of this Contract, then in any such event, each of which shall constitute a default hereunder by Contractor, Owner shall, after giving Contractor notice of default and seventy-two (72) hours within which to cure, have the right to exercise any one or more of the following remedies:

(i) require that Contractor utilize, at its own expense, overtime labor (including Saturday and Sunday work) and additional shifts as necessary to overcome the consequences of any delay attributable to Contractor's default;

(ii) attempt to remedy the default by whatever means Owner may deem necessary or appropriate, including, but not limited to, correcting, furnishing, performing, or otherwise completing the Work, or any part thereof, by itself or through others (utilizing where appropriate any materials and equipment previously purchased for that purpose by Contractor) and deducting the cost thereof (plus an allowance for administrative burden equal to fifteen percent (15%) of such costs) from any monies due or to become due to Contractor hereunder;

(iii) after giving Contractor an additional seventy-two (72) hours notice (at any time following the expiration of the initial seventy-two (72) hour notice and curative period), terminate the Contract, without thereby waiving or releasing any rights or remedies against Contractor or its sureties, and by itself or through others take possession of the Work, and all materials, equipment, facilities, plant, tools, scaffolds and appliances of Contractor related to the Work, for purposes of completing the Work and securing to Owner the payment of its costs (plus an allowance for administrative burden equal to fifteen percent (15%) of such costs) and other damages under the Contract and for the breach thereof, it being intended that Owner shall, for the stated purposes, be the assignee of and have a security interest in the property described above to the extent located on the Project site; or

(iv) call upon the surety, if applicable, to perform in accordance with the performance bond.

(v) recover from Contractor all losses, damages, penalties and fines, whether actual or liquidated, direct or consequential (including without limitation any increase in Owner's cost of insurance resulting from Contractor's failure to maintain insurance coverages required hereunder), and all reasonable attorneys' fees suffered or incurred by Owner by reason of or as a result of Contractor's default.

After completion of the Work by the exercise of any one or more of the above remedies and acceptance of the Work by Owner, Owner shall promptly pay Contractor any undisbursed balance of the Price, if any. If the cost of completion of the Work plus the allowance for administrative burden, together with any other damages or losses sustained or incurred by Owner, shall exceed the undisbursed balance of the Price, Contractor and its guarantors, surety, or sureties shall pay the difference within fifteen (15) days of written demand from Owner.

The foregoing remedies shall be considered separate and cumulative and shall be in addition to every other remedy given hereunder or under the Contract Documents, or now or hereafter existing at law or in equity. Contractor's guarantors, surety, or sureties agree to be bound to Owner with respect to such remedies notwithstanding any provision of the bonds as described herein.

Except as limited by this Contract, Contractor shall have the rights and remedies available at law or in equity for a breach of this Contract by Owner. Any default shall be deemed waived unless Contractor shall have given Owner written notice thereof within five (5) days after the occurrence of such default. Contractor shall not be entitled to stop the Work or terminate this Contract on account of Owner's failure to pay an amount claimed due hereunder (including payment for claimed changed Work) so long as Contractor shall not have adequately substantiated the amount due or so long as a good faith dispute exists as to the amount due. Contractor shall not be entitled to stop the Work on account of a default by Owner unless such default shall have continued for more than ten (10) days after Owner's receipt of written notice of such default from Contractor, specifying in detail the nature of the default and the steps necessary to cure the claimed default.

Contractor shall not be entitled to terminate this Contract except for a substantial and material breach by Owner which shall have continued, uncured, for at least an additional thirty (30) days after (a) Contractor shall have stopped working in accordance with this paragraph and (b) Owner shall have received thirty (30) days written notice of Contractor's intention to terminate this Contract.

Should any termination for default under paragraph 25 (iii) be determined to be invalid, improper or wrongful, such termination shall be deemed to have been a termination for convenience as provided in paragraph 27 below.

26. DISPUTES: If a dispute should arise between Owner and Contractor under or related to the Contract, or the breach thereof, then either party may seek redress of its grievances as to such disputes at law or in equity or by arbitration if both parties agree after default or breach to arbitrate. The award rendered by arbitrators shall not be final or binding. Contractor agrees to continue to perform its Work despite the existence of disputes. The existence of a dispute shall not be grounds for any failure to perform by Contractor nor limit the right of Owner to proceed, in good faith, to remedy any default by Contractor.

27. EARLY TERMINATION: Should this Contract be terminated based on default, Contractor shall assign all purchase orders and subcontracts to Owner if Owner, in its sole discretion, requests such assignments. Contractor agrees to incorporate such provisions in its agreements with suppliers and subcontractors to effectuate this provision. Nothing herein shall create any duty on the part of Owner to accept the assignment of any purchase order or subcontract hereunder.

Further, in its sole discretion and without notice to any guarantors, surety, or sureties, Owner may terminate this Contract for its convenience upon the giving of written notice to Contractor. In no event shall Contractor be entitled to consequential damages or loss of profits on portions of the Work not yet performed. If terminated for convenience, Contractor shall be entitled to be paid all costs of all Work provided hereunder including reasonable and necessary costs of termination, as determined in accordance with the method set forth in paragraph 8 above, together with the Profit Percentage attributable to the costs so determined. Payment shall be made in accordance with and subject to the requirements of paragraph 4.

28. SETOFF: If Contractor is, or hereafter begins, performing any other work for Owner other than the Work under this Contract and the unpaid balance of the Price becomes insufficient to complete such Work or compensate Owner for any damages or deficiencies by the Contractor in the performance of the other work, Contractor hereby consents and agrees to allow Owner, in its sole discretion and judgment, to setoff any of Owner's claims against any funds due, or which may become due, Contractor under any other agreement with Owner, or any contract on any other project. No refusal or failure of Owner to exercise its rights hereunder shall constitute the basis of any right or claim against Owner.

29. MISCELLANEOUS: (a) All matters relating to the validity, performance, or interpretation of this Contract shall be governed by the laws of the State of Georgia, performance, or interpretation, as the case may be, of the Contract. This Contract is entered into in Cobb County and all services under this Contract are capable of being performed and are to be performed in Cobb County, Georgia. Therefore, the parties agree that Cobb County is the proper venue for the resolution of any disputes.

(b) This Contract, including the documents incorporated herein by reference, embodies the entire agreement of the parties and supersedes all prior negotiations, agreements, and understandings related to the subject matter hereof.

(c) This Contract may not be changed in any way except as herein provided or by a writing signed by a duly authorized officer or agent of each party. No requirement of this Contract may be waived except in writing signed by a duly authorized officer of the waiving party.

(d) The provisions of this Contract and the Contract Documents are intended to supplement and complement each other. If, however, any provision of this Contract irreconcilably conflicts with a provision of the Contract Documents, the provision imposing the greater duty on the Contractor shall govern. In case a provision of this Contract is held to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not be affected.

(e) Where the context requires, neuter terms used herein shall include the masculine and feminine, and singular terms shall include the plural, and vice versa.

IN WITNESS WHEREOF, the parties have duly executed this Contract as of the date first above written.

COBB COUNTY BOARD OF COMMISSIONERS,
COBB COUNTY, GEORGIA

ATTEST:

By:

Title:

ATTEST:

CONTRACTOR:

By:

Title:

CONTRACTOR CHECK ONE: ☐ Corporation ☐ Partnership/Joint Venture ☐ Individual

LICENSING: By executing this Contract, Contractor affirms that it holds the following contractor license(s) applicable to the Work as required by the State of Georgia:

License No((s)) _____ License Classification(s): _____ Expiration Date: _____

FEDERAL EMPLOYER

ID #: _____

BUSINESS LICENSE #: _____

SCHEDULE A - WORK: Pursuant to paragraph 1 of this Contract, Contractor shall prosecute and complete the following Work:

SCHEDULE B - CONTRACT DOCUMENTS: The Contract Documents referred to in paragraph 1 and elsewhere in this Contract consist of the Contract and the following:

Project Manual dated xx/xx/20xx
All Addenda issued by the owner prior to receipt of bids
Contractor's Bid Form
Owner's Purchase Order and Notice to Proceed

SCHEDULE C - SUPPLEMENTAL PRICE SCHEDULE:

UNIT PRICES: Pursuant to paragraphs 2 and 8 of this Contract, the following unit prices shall be used in determining the Price and any adjustments thereto, without limitation unless expressly provided herein:

ALLOWANCES: The price specified on page 1 of the Contract includes the following allowances for the parts of the Work specified below, to be furnished by Contractor in accordance with the Contract Documents:

SCHEDULE D - PERFORMANCE SCHEDULE: Pursuant to paragraph 6 of this Contract and without limiting the provisions thereof, Contractor shall perform the Work and its several parts according to the following specific schedule, and as the same may be revised from time to time by Owner:

Contractor to complete all portions of the contract work within the calendar day period (120 calendar days) described in the Specifications portion of the Project Manual. The start date is established as the date the successful bidder receives the Owner's "Notice to Proceed." Should the Contractor fail to substantially complete the work under this contract per the specified schedule, he shall pay Owner liquidated damages of \$250.00 per calendar day for each consecutive calendar day until project is complete.



Cobb County...Expect the Best!

PERFORMANCE BOND

KNOWN ALL MEN BY THESE PRESENTS, that we, the undersigned _____, as principal and _____, as surety, are hereby held and firmly bound unto _____, as Obligee, the penal sum of One Hundred Thousand US Dollars (\$1000,000) for the payment of which well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that whereas the above named principal did enter into a contract entitled _____ with Obligee, which said contract is made a part of this bond the same as though set forth herein.

NOW THEREFORE, the condition of this obligation is such that if the said principal shall well and faithfully do and perform the things agreed to be done and performed according to the terms of Sections _____ and _____ of said contract then this obligation shall be void; otherwise the same shall remain in full force and effect.

Section _____ of said contract, stipulates that the principal shall hold harmless the Obligee and its employees, directors, officers, representatives, agents and affiliates from all costs and damages (including reasonable attorney's fees) which it may suffer by reason of the principal's failure to indemnify _____ as provided in Section _____ by making payment(s) up to the full amount of the obligation within (10) days of _____ having notified the surety of its claim(s) of damages, having identified the basis for any such claim, stating the amount claimed and the fact that such amount that the Obligee has incurred arises from any claim, suite action or other proceeding brought against the Obligee or any affiliate of the Obligee relating to:

1. Any product or service of the principal.
2. Any agreement, including the principal's dispute policy, with any second-level domain holder of principal.
3. The principal's domain name registration business, including, but not limited to, the principal's advertising, domain name application process, systems and other processes, fees charged, billing practices and customer service.

In the event of failure by the principal to perform its obligations under said contract, Obligee shall provide written notice of Principal's default to Surety at its address _____ and Surety shall cause to be paid within (10) days of receipt of Obligee's notice such amount certified by Obligee to be owing from principal pursuant to the contract.

Provided, however, that the liability of the surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

The surety may cancel this bond by first providing thirty (30) days written notice to the Obligee and principal. Such cancellation shall not discharge the Surety from any liability already accrued under this bond prior to the expiration of the (30) day period.

WITNESS OUR SIGNATURE this _____ day of _____, 20____.

Principal (SEAL)

By _____

Surety (SEAL)

By _____ Attorney-in-Fact



Cobb County...Expect the Best!

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal, and
(Corporation, Partnership, or Individual)

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto _____

(Name of Owner)

(Address of Owner)

hereinafter called Owner, in the penal sum of _____ Dollars,
(\$ _____) in lawful money of the United States, for the payment of which sum well and
truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and
severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION is such that whereas, the Principal entered into a certain
contract with the Owner, dated the _____ day of _____, 20____, a copy of which is
hereto attached and made a part hereof for the construction of:

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, forms,
subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the
work provided for in such contract, and any authorized extension or modification thereof, including all
amounts due for materials lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment
and tools, consumed or used in connection with the construction of said work, and all insurance
premiums on said work, and for all labor, performed in such work whether by subcontractor or other-
wise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no

change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any

ways affects its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the contractor shall abridge the right of any beneficiary hereunder, who claims may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in six (6) counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20____.

(Principal) (SEAL)

(Principal Secretary)

ATTEST: BY _____

(Witness as to Principal) (Address)

(Address)

(Surety) (SEAL)

ATTEST: BY _____
(Attorney-in-Fact)

to Surety) (Address) _____ (Witness as

(Address)

NOTE: If Contractor is Partnership, all partners should execute bond.

IMPORTANT: Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the project is located.

TO: COBB COUNTY BOARD OF COMMISSIONERS

THE UNDERSIGNED HAVING EXAMINED THE PROPOSED CONTRACT DOCUMENTS TITLED:

**Purchase and Installation of New HVAC System at the
Cobb Health Department Headquarters
1650 County Services Parkway Georgia 30008**

Sealed Bid #12-5654

AND HAVING VISITED THE SITE AND EXAMINED THE CONDITIONS AFFECTING THE WORK, HEREBY PROPOSES AND AGREES TO FURNISH ALL LABOR AND MATERIALS, EQUIPMENT, AND APPLIANCES AND TO PERFORM THE OPERATIONS NECESSARY TO COMPLETE THE WORK AS REQUIRED BY SAID PROPOSED CONTRACT DOCUMENTS, FOR ALL OF THE WORK IDENTIFIED AS TOTAL LUMP SUM QUOTE FOR ALL ITEMS AS SPECIFIED FOR THE STIPULATED SUM OF:

_____ DOLLARS (\$_____)

The undersigned understands and agrees also to comply with and be bound by the entire contents of the Project Manual.

The undersigned understands and agrees also to comply with and be bound by the entire contents of the Request for Bid including all Addenda.

Acknowledged: _____

The undersigned acknowledges receipt of Addenda numbers:

ADDENDUM NO.	_____	Acknowledged:	_____
ADDENDUM NO.	_____	Acknowledged:	_____
ADDENDUM NO.	_____	Acknowledged:	_____
ADDENDUM NO.	_____	Acknowledged:	_____

BID FORM

PAGE 2 OF 3

CONTRACTOR'S QUALIFICATION STATEMENT**I. CONTRACTOR**

Name of Contractor: _____

Address of Contractor: _____

Primary Contact Person: _____

Telephone Number: _____

II. BANK REFERENCE

Primary Bank: _____

Relationship officer
responsible for account: _____

Telephone Number: _____

III. BACKGROUND

Has Contractor ever done business under a different name? _____

If so, provide names: _____

Prior projects with Cobb County: _____

SIMILAR PROJECT EXPERIENCE

1. Name of project: _____

Address of project: _____

Contact person with Owner: _____

Phone number: _____

2. Name of project: _____

Address of project: _____

Contact person with Owner: _____

Phone number: _____

BID FORM

PAGE 3 OF 3

Bidder: _____

Signed: _____

Title: _____

Address: _____

Bonding Co: _____

Bonding Co Agency: _____

License#: _____

Type of Business Entity: _____

_____ (corporation, sole proprietorship, partnership, p.c.)

Individual Members of the Firm _____

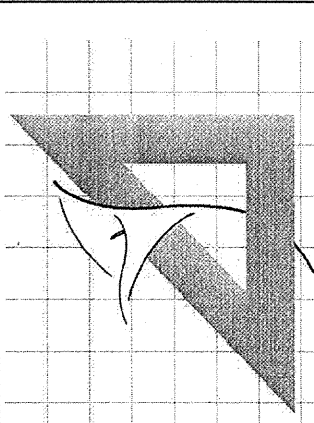
President of the Corporation

Secretary of the Corporation

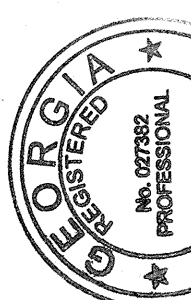
Corporation is organized under the Laws of the State of _____

Bid dated this _____ day of _____

END OF BID FORM



Lilly Young & Associates, Inc.
4275 SHACKLEFORD ROAD
SUITE 130
NORCROSS, GEORGIA 30093
(770) 678.533.0300
(F) 678.533.0301

[illegible]

2.29.2012

MARIETTA HEALTH CENTER HEADQUARTERS
COBB COUNTY PROPERTY MANAGEMENT
MARIETTA, GA

[illegible]

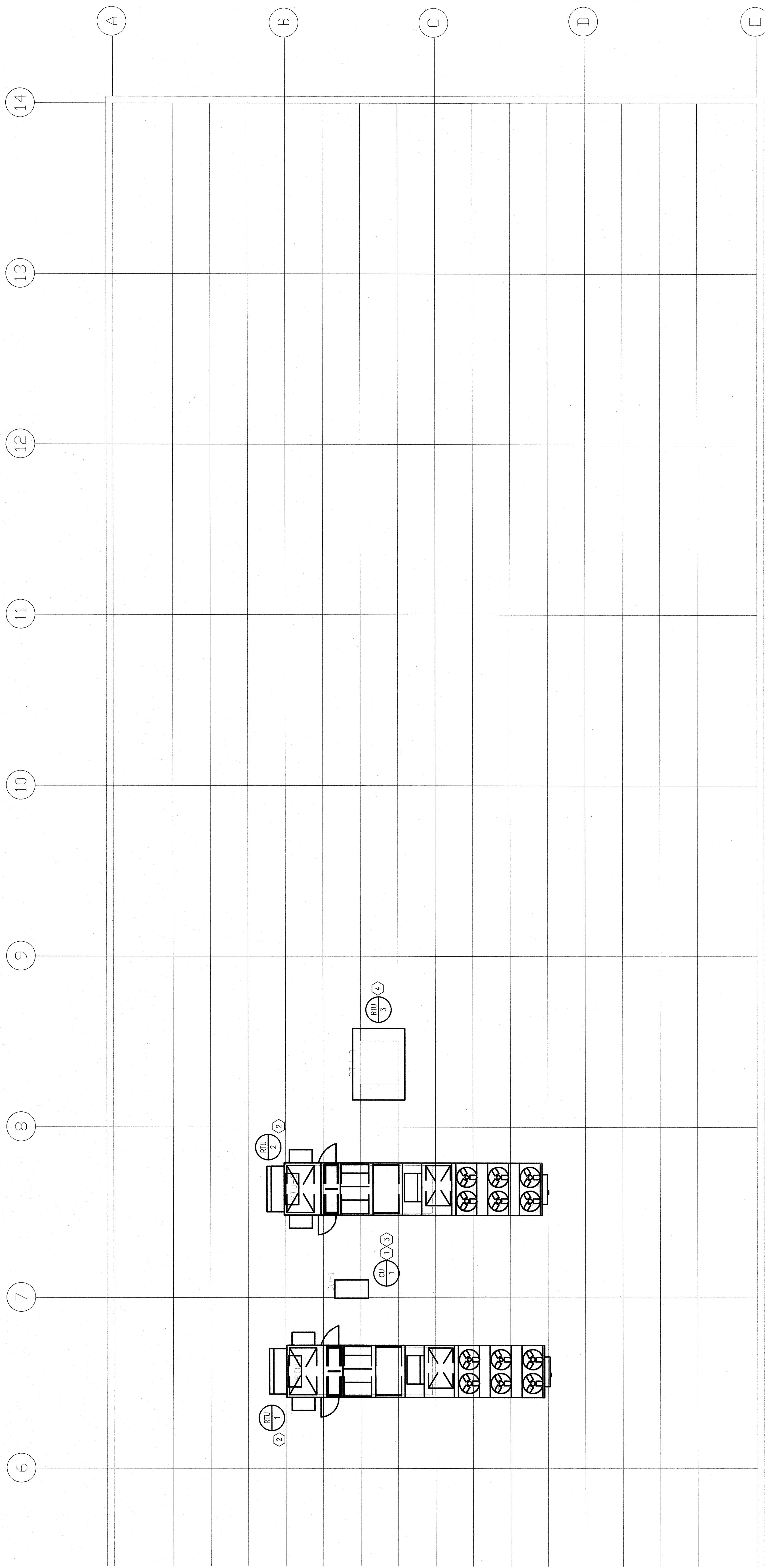
Date	Project No.
03-01-2012	112002LY
Sheet Title	

PARTIAL ROOF PLAN

Sheet No. _____

E1.0

Released for Construction



KEY NOTES:

- ① AIR HANDLER AH-1 IS ASSOCIATED WITH CU-1. IT IS LOCATED ABOVE THE EXISTING ELECTRICAL ROOM. REMOVE EXISTING DISCONNECT WITH 454, 3-POLAR BREAKER IN PANEL MOP (MAIN ELECTRICAL ROOM), ROUTE 3#6, 1#0C - 3/4" TO 60A/3P/1 DISCONNECT SWITCH.
- ② REMOVE EXISTING DISCONNECTS, PROVIDE AND INSTALL NEW 400A/50K/250A DISCONNECT. CONNECT TO EXISTING FEEDER AND MAKE FINAL CONNECTION TO NEW RTU.
- ③ REPAINT EXISTING BREAKER IN MOP FOR CU-1 WITH 30A, 3-POLAR. REMOVE 50A/4"/3/0A DISCONNECT FOR ROOF MOUNTED EQUIPMENT. RE-USE EXISTING BRANCH CIRCUITING.
- ④ REPAINT EXISTING FUSES IN DISCONNECT SWITCH IN MAIN ELECTRICAL ROOM WITH 20A FUSES. EXISTING DISCONNECT AT ROOF MOUNTED EQUIPMENT WITH BRANCH CIRCUITING MAY REMAIN.

PARTIAL ROOF PLAN

SCALE: 1/8" = 1'-0"

HVAC GENERAL NOTES

1. ALL MECHANICAL EQUIPMENT AND INSTALLATIONS SHALL CONFORM WITH THE REQUIREMENTS OF THE 2008 INTERNATIONAL MECHANICAL CODE, THE 2008 INTERNATIONAL BUILDING CODE, THE 2009 INTERNATIONAL ENERGY CODE, STATE AMENDMENTS, NFPA 90A, 901, UNDERWRITERS LABORATORIES (OR ETL) AND ALL APPLICABLE LOCAL CODES AND ORDINANCES.

2. PRIOR TO PURCHASING ANY MATERIALS OR STARTING ANY WORK, CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS, DUCTWORK, SIZES AND LOCATIONS, EQUIPMENT, ETC. SHOWN ON THE DRAWINGS OR AFFECTING THIS WORK AND SHALL REPORT ANY DEVIATIONS TO THE ARCHITECT.

3. SHOP DRAWINGS SHALL BE SUBMITTED TO AND APPROVED BY THE ARCHITECT PRIOR TO ORDERING, PURCHASING, OR FABRICATING ANY MECHANICAL EQUIPMENT ON THE DRAWINGS. REFRIGERANT PIPING AND CONTROL WIRING SCHEMATICS CERTIFIED BY THE AIR CONDITIONING EQUIPMENT MANUFACTURER. FAILURE TO SUBMIT SHOP DRAWINGS FOR REVIEW SHALL BE CONSIDERED AS A WAIVER OF THE MANUFACTURER'S WARRANTY. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS IN ACCORDANCE WITH THE MANUFACTURER'S CURRENT SHOP SYSTEM LONG-LINE APPLICATION GUIDELINE.

4. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

5. ALL MECHANICAL EQUIPMENT AND SYSTEMS SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE BY OWNER.

6. ALL HVAC COMPRESSORS SHALL HAVE EXTENDED 4-YEAR MANUFACTURER'S WARRANTY FOR A 5-YEAR TOTAL WARRANTY.

7. UNLESS OTHERWISE NOTED, ALL EXISTING EQUIPMENT, DUCTWORK, DEFLECTORS, ETC. SHOWN AS BEING REMOVED AS PART OF THIS CONTRACT SHALL BECOME THE PROPERTY OF THE HVAC CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT SITE PRIOR TO PROJECT COMPLETION.

8. ALL WORK SHALL BE COORDINATED AND PERFORMED WITH PRIOR APPROVAL FROM THE OWNER TO SUIT HIS OPERATING CONDITIONS. WORK IN HAZARDOUS (PLANT) AREAS SHALL BE PERFORMED IN ACCORDANCE WITH THE OWNER'S REQUIREMENTS.

9. ANY EXISTING WALL, FLOOR, OR CEILING SURFACE THAT IS DISTURBED DURING THE COURSE OF THE HVAC WORK SHALL BE REPAIRED TO MATCH NEW AND/OR EXISTING CONDITIONS.

10. AFTER CONSTRUCTION, THE ENTIRE HVAC SYSTEM SHALL BE TESTED, ADJUSTED, AND BALANCED TO DELIVER THE AIR QUANTITIES SHOWN ON THE DRAWINGS. SUBMIT CERTIFIED (AHRC OR NEBB) TEST AND BALANCE REPORT TO THE ENGINEER FOR APPROVAL.

11. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL MECHANICAL EQUIPMENT, DUCTWORK, PIPING, ETC., TO FIT WITHIN THE SPACE ALLOWED BY THE ARCHITECTURAL AND STRUCTURAL CONDITIONS. CUTTING OR OTHERWISE ALTERING ANY STRUCTURAL MEMBERS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT.

12. ALL PIPE AND DUCT PENETRATIONS OF FIRE AND/OR SMOKE-RATED ASSEMBLIES SHALL BE PRE-STOPPED AS REQUIRED TO RESTORE THE ASSEMBLY TO ITS ORIGINAL INTEGRITY. FIRE BARRIER PRODUCTS SHALL BE AS MANUFACTURED BY TREMCO, HULTI, 3M, OR APPROVED EQUAL.

13. ALL MECHANICAL EQUIPMENT SHALL BE LABELED WITH A SEMI-RIGID PLASTIC LAMINATE NAMEPLATE WITH 2" HIGH WHITE LETTERS ON A BLACK BACKGROUND SECURELY AFFIXED TO THE EQUIPMENT. THE NAMEPLATE SHALL SHOW THE EQUIPMENT TAG USED ON THESE DRAWINGS. ON RESIDENTIAL PROJECTS, THE NAMEPLATE ON THE OUTDOOR EQUIPMENT SHALL INDICATE THE APARTMENT OR CONDOMINIUM UNIT NUMBER IT SERVES AS WELL AS THE EQUIPMENT ID TAG.

14. CONTRACTOR SHALL BE FAMILAR WITH ALL NECESSARY SYSTEM EXISTING CONNECTIONS AND CONTROLS. CONTRACTOR IS RESPONSIBLE TO RETURNING SYSTEM BACK TO EXISTING CONTROL SEQUENCE WITH ALL THE NECESSARY CONNECTIONS.

15. CONDENSATE SHALL BE TRAPPED AND ROUTED TO NEAREST ROOF DRAIN.
- MECHANICAL/ELECTRICAL COORDINATION:
1. CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH ELECTRICAL DRAWINGS. PRIOR TO ORDERING, PURCHASING, OR FABRICATING ANY MECHANICAL EQUIPMENT, CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS, DUCTWORK, SIZES AND LOCATIONS, EQUIPMENT, ETC. SHOWN ON THE DRAWINGS OR AFFECTING THIS WORK AND SHALL REPORT ANY DEVIATIONS TO THE ARCHITECT.

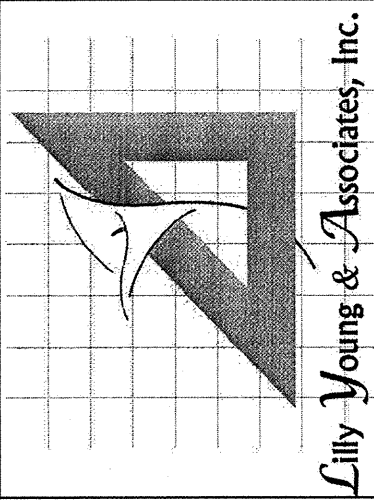
2. ALL MECHANICAL EQUIPMENT REQUIRING ELECTRICAL POWER SHALL BE INSTALLED WITH DISCONNECT SWITCHES AT EACH PIECE OF EQUIPMENT. COORDINATE SWITCH TYPE (FUSED OR NON-FUSED) WITH EQUIPMENT CHARACTERISTICS, MANUFACTURER'S RECOMMENDATIONS AND THE ELECTRICAL DRAWINGS.

3. ALL REQUIRED CONTROL WIRING (INCLUDING POWER WIRING REQUIRED FOR CONTROL PANELS, DRIVES, ETC.) NOT SHOWN ON THE ELECTRICAL DRAWINGS SHALL BE INCLUDED AS PART OF THE MECHANICAL WORK. WIRING IN HVAC PLENUM SPACES SHALL BE INSTALLED ACCORDING TO CODE REQUIREMENTS.

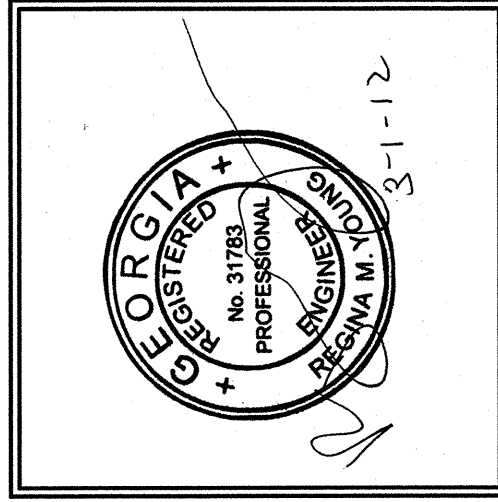
4. UNLESS NOTED OTHERWISE, TRANSFORMERS, CONTROLS AND CONTROL WIRING REQUIRED FOR ALL MECHANICAL SYSTEMS SHALL BE FURNISHED WITH THE EQUIPMENT IT SERVES AND INSTALLED BY THE MECHANICAL CONTRACTOR. MOTOR STARTERS FOR HVAC EQUIPMENT SHALL BE FURNISHED WITH THE MOTOR OR APPARATUS WHICH IT OPERATES. MOTOR STARTER INSTALLATION SHALL BE BY THE DIVISION 16 CONTRACTOR.
-
-
- TOTAL TRAP HEIGHT = X + H + 1.5 D
WHERE:
X = AT LEAST 1" PLUS CASING SP
H = 1/2 H
D = PIPE DIAMETER
- CONDENSATE DRAIN TRAP DETAIL
NOT TO SCALE
- HVAC LEGEND
- | SYMBOL | DESCRIPTION | ABBREVIATIONS |
|--------|------------------------------------|---------------|
| | EQUIPMENT DESIGNATION | MBH |
| | 1000 BTU/Hr | A/C |
| | ABOVE CEILING | AFF |
| | ABOVE FINISHED FLOOR | CO |
| | CONDENSATE DRAIN | DB |
| | DRY BULB | EAT |
| | ENTERING AIR TEMPERATURE | ESP |
| | EXTERNAL STATIC PRESSURE (IN W.C.) | LAT |
| | LEAVING AIR TEMPERATURE | OA |
| | OUTSIDE AIR | PA |
| | RETURN AIR | SP |
| | STATIC PRESSURE (IN W.C.) | SA |
| | SUPPLY AIR | TOD |
| | TOP OF DUCT | UNO |
| | WET BULB | WB |
- RTU VAV PACKAGED DX UNIT (NO HEAT)
- | TAG | MODEL No. | TOTAL SUPPLY CFM | MIN OA CFM | ECONOMIZER GA CFM | MAX EXHAUST SUPPLY CFM | TOTL EXHAUST CFM | MIN OA CFM | ESP | EAT (DB) | EAT (WB) | TOTAL COOL (LB) | WEIGHT (LB) | ACCESSORIES |
|-------|-----------|------------------|------------|-------------------|------------------------|------------------|------------|-------|----------|----------|-----------------|-------------|-------------|
| RTU-1 | PH4000 | 28,500 | 4,500 | 28,500 | 40 | 24,555 | 15 | 4,500 | 2.5 | 80.3 | 55.5 | 15,500 | 1-14 |
| RTU-2 | PH4000 | 27,000 | 4,500 | 27,000 | 40 | 23,460 | 207.5 | 4,500 | 2.5 | 80.1 | 55.5 | 15,500 | 1-14 |

NOTES:
A. COOLING CAPACITY BASED ON EAT 80 DB F, &W 67 DB F, &W INDOOR ENTERING AIR TEMPERATURE AND 95 DB F, &W.
B. MIN STRAIGHT-STATE COMBUSTION EFFICIENCY.
C. MIN LEBT 11.
D. R-10A REFRIGERANT

ACCESSORIES:
1. MOUNT UNIT TO EXISTING CURB AND PROVIDE ADAPTER CURB AS NECESSARY
2. BACON COMMUNICATIONS WITH EXISTING BAS
3. BACON EXHAUST WITH EXISTING BAS
4. SMOKE DETECTOR IN SUPPLY AND RETURN
5. ECONOMIZER WITH DIFFERENTIAL ENTHALPY CONTROLS
12. 2" MESH 7' FILTERED FILTERS
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MARIETTA HEALTH CENTER HEADQUARTERS
COBB COUNTY PROPERTY MANAGEMENT
MARIETTA, GA

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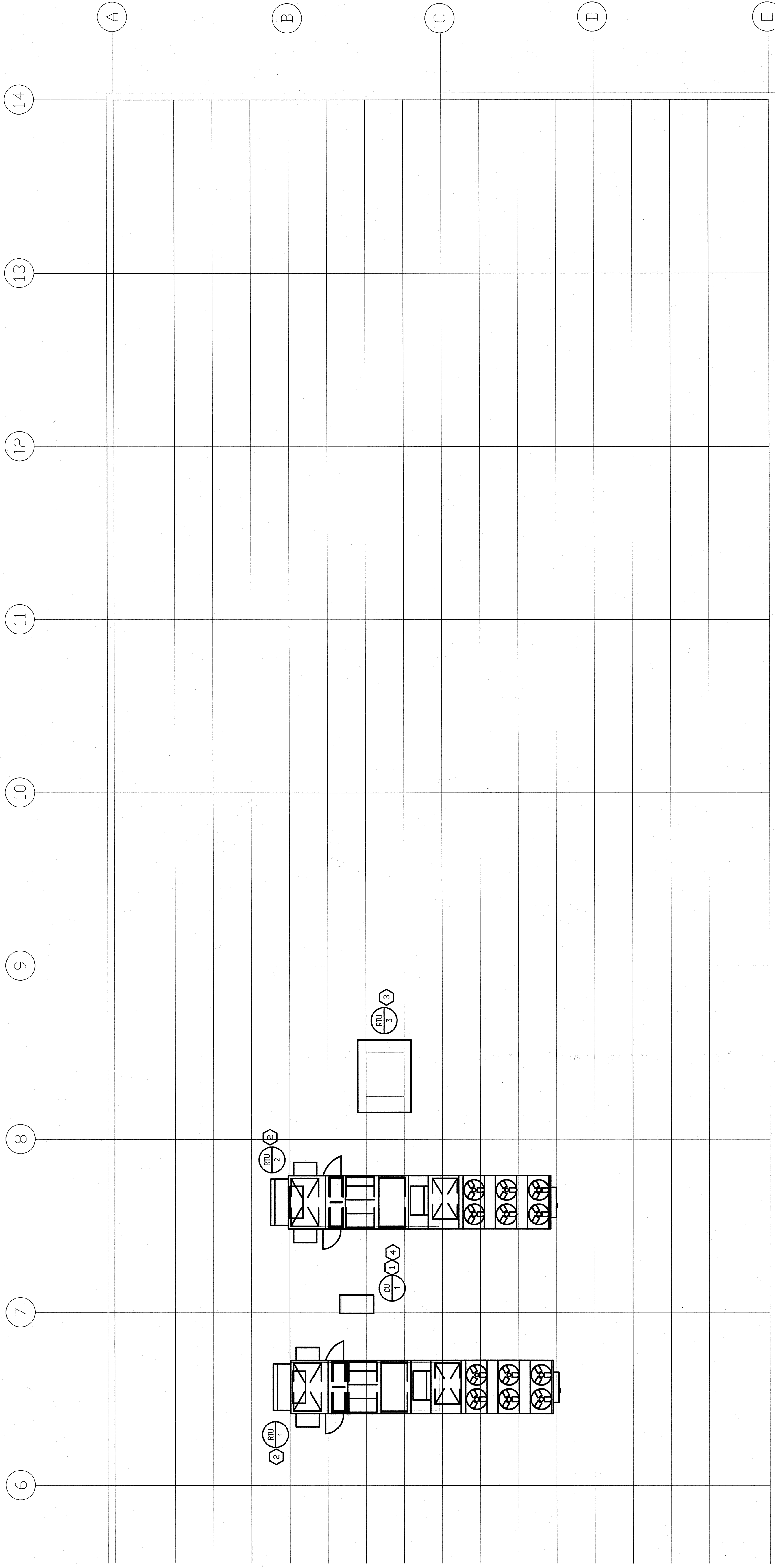
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PARTIAL ROOF PLAN

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Released for Construction



KEY NOTES:

- ① AIR HANDLER SHALL BE ASSOCIATED WITH ONE-TO-ONE RATIO. THE CEILING OF THE ROOM SHALL BE COVERED BY THE SAME NUMBER OF CONVEYORS. THIS SHALL INSURE NEW UNIT AND REPAIRS WILL NOT AFFECT EXISTING FLOW OF CONTAMINATED SHAWNS AS DESIGN OF EXISTING PLANS (W-1) TO GO TO EIGHT LOCATION. NEW UNIT IS SAME AS EXISTING. SUPPORTS SHALL BE NEW AS NECESSARY.
- ② MOUNT NEW RTU ON EXISTING CURB. PROVIDE CURB FOR NEW DESIGN AS NECESSARY. BASIS OF DESIGN UNIT IS 22' LONGER AND 12" WIDER THAN EXISTING.
- ③ MOUNT NEW RTU ON EXISTING CURB. PROVIDE CURB FOR NEW DESIGN AS NECESSARY. BASIS OF DESIGN UNIT IS 34' LONGER AND 6" WIDER THAN EXISTING UNIT. SET OUT ON CURB SO THAT EXHAUST APERTURE IS A MINIMUM OF 10' APART.
- ④ MOUNT NEW CU ON EXISTING CURB. PROVIDE CURB FOR NEW DESIGN UNIT IS 13" SHORTER AND 18" WIDER THAN EXISTING UNIT. SET OUT ON CURB WITH 18" CLEARANCE FROM MARKS AS A MINIMUM OF 10' APART.

PARTIAL ROOF PLAN

SCALE: $1/8'' = 1'-0''$